Personnel

May/June/1959

Wages and Productivity

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IT MAKES NO difference whether abuse of the manager's inherent power is hidden or in the open, whether it is brute oppression or affable manipulation of consent. Nor does it matter whether the motives are selfish or genuine altruism, desire for self-aggrandizement or mistaken kindness. It is abuse, if not despotism, for a manager to aim at power rather than at responsible performance.

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—PETER F. DRUCKER, *Landmarks of Tomorrow.*

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PERSONNEL, Volume 36, No. 3, May-June, 1959. Published bi-monthly by the American Management Association, Inc. Publication offices, 10 Ferry Street, Concord, N. H. Editorial and business offices, 1515 Broadway, Times Square, New York 36, N. Y. Second-class postage paid at the Post Office at Concord, N. H. Single copies, $1.25 (non-members, $1.75). Subscriptions: $6.00 per year (non-members, $10.00). Copyright © 1959 by American Management Association, Inc.

Please address all correspondence to PERSONNEL *Magazine, American Management Association, Inc., 1515 Broadway, New York 36, N. Y.* Change of address should be forwarded *six weeks in advance* and postal zone numbers should be included in all addresses.

The object of the publications of the American Management Association is to place before the members ideas which it is hoped may prove interesting and informative, but the Association does not stand sponsor for views expressed by authors in articles issued in or as its publications.

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An index to PERSONNEL is published annually with the November-December issue. The contents are also indexed in the *Industrial Arts Index*.

PERSONNEL is microfilmed by University Microfilms, Ann Arbor, Mich.

strictly personnel

Scientists and Engineers Oppose Collective Bargaining

THOUGH SCIENTISTS AND ENGINEERS are generally counted among the least satisfied classes of employees, few of them apparently are discontented to the point of favoring some form of collective action to improve their salaries and status. Preliminary findings from a University of Michigan study of over 250 scientists and engineers in 10 major companies show that only 18 per cent welcomed the idea of bargaining collectively, while 50 per cent were strongly opposed to it and another 29 per cent regarded it with mild disfavor.

Among those who thought that collective bargaining would be to their advantage, rather more than one half envisioned action along union lines. The rest took the view that more vigorous support should be forthcoming from the professional societies and that some machinery might be set up whereby a society could ascertain the opinions of its members and present them to top management.

In general, the study showed, the attitude of these professional employees toward collective bargaining seemed to depend upon how they felt about their present salary levels. Higher salaries and more equitable salary adjustments were the reasons most often cited for seeking redress through collective action.

However, about one-third of all the respondents took the view that salaries and promotions achieved through collective bargaining would not reflect the individual employee's responsibilities, performance, or qualifications. Other objections to collective bargaining were that it might introduce undesirable policies and practices of labor unions, restrict the personal freedom of professional employees, impair their relations with management, and reduce their status in their communities.

On the whole, the findings indicate that while there seems to be a general awareness on the part of scientists and engineers that they cannot look to collective bargaining for the intangible rewards that mean so much to them, dissatisfaction over existing salary inequities might cause many of those who now oppose unionism to change their minds. Management must give both tangible and intangible recognition to the achievements of professional employees if they are to be motivated to do their best work.

Wage Incentives and Productivity

WHILE THE LITERATURE on wage incentives is replete with dire examples of plans that somehow failed to live up to their advance billing, rather less is heard about those installations that have

achieved what they were supposed to do. Like happy marriages, it seems, successful incentive systems seldom make news.

Actually, according to a study of the results of 2,500 wage incentive plans by Mr. John D. Dale, President of the George Elliott Company, Inc., of New York, the record lends considerable support to the view that incentive systems do induce employees to work harder. In the 29 different industries covered by the study, the incentive programs resulted in an average increase in productivity of 63.5 per cent, an average rise in employee earnings of 20.6 per cent, and an average saving of 25.91 per cent in unit labor costs.

These averages are based on the middle 50 per cent of the cases reported. Had the top and bottom quarters been figured in, the averages would probably have been much higher, Mr. Dale points out, since even among the bottom 25 per cent, there was a marked improvement in the positions of the companies concerned.

Broken down still further, the averages show that for every 1 per cent increase in wages, productivity increased by 3.1 per cent and unit labor costs were reduced by 1.25 per cent.

On the average, 43 companies were included in each industrial classification, though the actual numbers ranged from seven companies in the smallest category to 85 in the largest. Top ranking industry as regards productivity gains was tobacco manufacture, with a 100 per cent increase. Gains of 90 per cent or more were found in the petroleum and coal products, air transportation, stone, clay, and glass products, and printing and publishing industries. Only five groups showed gains of less than 50 per cent, automobiles and auto equipment being at the bottom of the list with 39 per cent.

Of the plans studied, 77 per cent were installed since 1948, while the rest dated from during and before the war. All of them were based on work measurements arrived at by time studies or predetermined time systems, with incentive bonuses being paid for productivity over and above "standard performance."

How Good Are Negotiated Health Plans?

DIVIDED THOUGH they may be on almost all other matters, labor and management are firmly united when it comes to the question of how to obtain the best employee health services at the lowest possible cost. But—as the very diversity of benefit plan patterns now prevailing throughout the country clearly shows—just what constitutes the "best" is still an unresolved problem.

With the aim of developing impartial and statistically sound information in this area, the Columbia University School of Public Health and Administrative Medicine is presently making a nationwide survey of the patterns of family medical care under four major types of negotiated health insurance plans. The survey, which is being conducted on behalf of the Foundation on Employee Health, Medical Care and Welfare, Inc., a research organization jointly sponsored and financed by labor and management, will, it is hoped, provide information that should be of considerable help to employers and unions in coming to intelligent decisions about the purchase of health insurance.

Though it will be some time yet before the findings of this survey are available, some indications that workers are far from making the best possible use of their present health benefits are forthcoming from a pilot study carried out by the Columbia research team before the larger project got under way. In this study,* 286 members of District 18 of the International Association of Machinists (a group of locals that have negotiated a wide variety of health plans, including "dual choice" between two comprehensive plans providing home and office care) were interviewed in their homes and asked about the various kinds of medical care (excluding dentistry) they had received during certain fixed periods.

The responses showed that though these families lived in the world's greatest medical center—metropolitan New York—over one-quarter of the hospitals they had used during the previous year were unaccredited. Further, of the 284 doctors they had consulted during a three-month period, 18 could not be identified in the *American Medical Directory* and another 79 had no staff appointment at an accredited hospital. In other words, over one-third of the doctors used were not in a position to admit and care for their patients in a hospital meeting minimal safety standards.

In general, the union members surveyed had only the haziest idea of the professional standing of the physician they consulted. Of the 101 doctors described as "specialists," 21 were actually general practitioners and another six were not listed in the *American Medical Directory*. On the other hand, about 15 per cent of the doctors who were not identified as specialists were in fact diplomates of American specialty boards or devoted themselves full time to a specialty.

Asked their opinion of the medical care they had received, 40 per cent of the families thought it was "the best . . . that modern medicine provides." Yet about one-quarter of the physicians used by these particular families had no staff appointment at an accredited hospital, and on the whole the doctors treating this highly satisfied group were not much better qualified than those who had treated families who thought that the care they had received was only "reasonably good."

Among other findings, the study disclosed (1) while insurance provided for about 86 per cent of the hospital bills, it covered only about one-half the charges for medical care during hospitalization; (2) two-fifths of all out-of-pocket medical expenditures by the 286 families during a three-month period went for drugs; and (3) 32 per cent of all the out-of-pocket expenditures reported were borne by only 5 per cent of the families—an indication that even where insurance protection is relatively good, it falls far short of the ideal when serious illness strikes.

Overseas Personnel: Some Clues to Better Selection

EXCLUSIVE OF military personnel and their families, well over 100,000 Americans are now employed abroad—and this total is expected to increase steadily in the years to come. It is no secret that, in the past, a sizable number of those who have been

* A. H. Hayes and J. I. Snyder, Jr., *A Report on the Plans and Progress of the Foundation on Employee Health, Medical Care and Welfare, Inc.* New York, 1959.

sent overseas have turned out to be unfortunate choices, manifesting all the signs and symptoms of maladjustment—frequent requests for transfer, persistent quarreling, higher than average sickness and accident rates, poor quality work, absenteeism, and alcoholism. How can such misfits be avoided in the future?

More intelligent selection procedures can certainly help, suggests the Group for the Advancement of Psychiatry in a new report on the psychological problems of working abroad.* Hitherto, the report points out, the tendency has been to give more weight to a candidate's technical competence than to his personal suitability for an overseas appointment. But experience has shown that a man's ability to stand up to the emotional strains and stresses of a foreign job is often more important than his professional skill. In some cases, it may even be better not to fill the job at all, the report points out, than to send a highly trained man who is likely to fail in his personal or public relations.

In addition to a careful appraisal of the candidate's training and experience, special efforts should be made to assess his reactions to relocation, the report suggests. This, however, it is conceded, is easier said than done. Not only are the specific psychological conditions imposed by an overseas job harder to define than those of a comparable job at home. It is also difficult to predict with any accuracy a man's ability to maintain good mental health in foreign surroundings.

However, a promising approach is to use selection not merely as a means of determining a man's present qualities but also as a measure of his potentialities for growth in the new job and situation. Good indications of the psychological flexibility needed are a work history that demonstrates the ability to overcome difficulties, evident success in adapting to an unaccustomed environment, and a record of harmonious working relationships.

Preferably, says the report, the background appraisal should not be limited to reports from former supervisors—it should also include the opinions of the candidate's peers and subordinates. Nor should reliance be placed upon a single interview. A series of interviews, conducted by interviewers who have been carefully trained to use the insights of psychiatry, provides the best safeguard for arriving at a balanced assessment of all the available data on a candidate, in the light of the particular location and type of assignment under consideration.

Finally, the candidate himself can be an active partner in the selection process. As a rule, a man who is being considered for an overseas job is already successful in his present one. He is unlikely to want to jeopardize his future by taking on a new assignment that may prove to be beyond his capabilities. If he is given full and honest information about the job and its potential drawbacks or difficulties, he will usually come up with a realistic appraisal of his own capacity to cope with the situation.

* *Working Abroad: A Discussion of Psychological Attitudes and Adaptation in New Situations.* Group for the Advancement of Psychiatry, 104 E. 25th St., New York 10, N. Y. 1958. 50 cents.

Many industries have followed the lead of the automobile companies in using the so-called productivity formula as an alternative to bargaining on annual wage increases. They are all, says the author, living in a fool's paradise and it's high time they came down to earth.

Wages and Productivity

J. HOWELL TURNER

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At a meeting of the Illinois Manufacturers' Association in Chicago not long ago, Senator Harry F. Byrd had some trenchant things to say about the dangers of irresponsible federal spending.

"With fiscal soundness I would have no fear for the future—economically or militarily," the Senator said. "I would anticipate the period ahead with enthusiasm for my children and with pride in the contribution of my own generation. . . . But we cannot perpetuate national solvency and integrity of the dollar through continuous deficit spending, unchecked national debt, and spiraling inflation. This situation jeopardizes our system of government and our future."

These are sentiments that will be shared by many business men. Most of us are appalled by the fact that interest on the federal debt is now taking more than 11 cents out of every federal tax dollar. If the inflation that has made today's dollar worth only 48 cents by the 1939 index continues unchecked, we see nothing but catastrophe ahead.

Yet, for all our fears, what are we actually doing to stem the tide? Of course, every time someone like Senator Byrd proclaims that government spending must be brought back within sane limits, we're with him all the way. On the subject of government spending we are admirably vocal. But our dangers do not lie merely in government spending as such—the real menace is the inflation that excessive government spending inevitably helps to produce.

I say "helps" because inflation is not only the product of the federal spenders or even of the federal, state, and local government spenders combined. It can be produced equally as well by

Note. This article has been adapted from a paper delivered at AMA's Midwinter Personnel Conference.

private industry, if industry fails to follow a policy that keeps costs and, consequently, prices in proper line.

Unfortunately, by embracing a concept that holds vast potential for further accelerating inflation, some branches of industry have already strayed far from this policy. The concept I refer to is the so-called productivity formula, whereby industrial wages are increased in accordance with the calculated increase in the nation's productivity from year to year.

While this formula may sound wonderfully simple and delightfully innocuous, actually it makes no more sense than the suggestion that we try spending our way to stability by new federal handouts.

Productivity and the Productivity Formula

Perhaps, at this point, I should make it clear that productivity and the productivity *formula* are two entirely different things.

Productivity is, of course, a major national asset, for it is the increase in productivity through technological progress that has, in the long run, given us our ever-increasing standard of living. Today, the average American works some 15 per cent fewer hours than he did in 1930, yet his purchasing power over that period has risen by 50 per cent—a fact that is both a rough measurement of and an inspiring tribute to our increased productivity.

Moreover, no one now disputes that the benefits of increased productivity must be shared fairly by all segments of the population. Indeed, in the final analysis, the very survival of the free enterprise system hangs on the success with which this principle is applied. If capital gets too small a share of the fruits of greater productivity, the reservoirs of investment needed to finance new research and new technology dry up; and if labor gets too small a share, there is not enough purchasing power to keep our consumption-oriented economy going. To keep the economy vigorous and continually expanding, the distribution of the gains of productivity must be more or less evenly balanced.

It is easy to understand, therefore, why, in pursuit of this aim, there have been so many attempts to work out a formula that will give us an exact measurement of changes in productivity. Less easy to understand, however, and in fact quite shocking is the claim by some management people that such a formula has actually been found.

This business started in earnest in 1948 with the introduction into labor contracts in the automobile industry of what was originally called the annual improvement factor and is now rationalized as an adjustment for increased productivity. Unfortunately, the automobile industry has been stuck with this phony formula ever since. Even more unfortunately, its use has since spread to other industries, and many labor leaders are constantly pressing to have it applied across the board.

Those who use the productivity formula contend that they have found a

magnificently precise yardstick and, while they may not always agree on its exact size, they are united in the belief not only that a yardstick exists, but that it is infallible in its application. How wonderful this would be if only it were true!

Output and Input

To understand why it isn't true, we must begin by asking, what *is* productivity anyway? All our expert economists agree that it is nothing more than the simple ratio of output to input. Thus, if X equals the value of all the goods and services that are produced in a given economy within a given period of time, and Y equals all the varying kinds of resources that have contributed to producing those goals and services, we arrive at a measure of productivity simply by dividing X by Y. Or, to express it algebraically, $\frac{X}{Y}$ = Productivity.

By means of this elementary equation, we can immediately recognize some of the significant aspects of productivity. If, for example, output (X) increases while input (Y) remains the same, productivity has increased. Conversely, if output (X) decreases while input (Y) remains the same, productivity has dropped. So far so good. But as soon as we quit playing with purely theoretical X's and Y's, we run into problems—and virtually insoluble problems at that.

Take the output part of the ratio, for example—how can it be measured accurately? Let's say, by way of illustration, that in 1948 a certain company produced 1,000 hand lawnmowers. In 1958 this same company produced the same number of lawnmowers, only these happened to be de luxe power jobs. How can we measure the difference in real value of this output? The unit number has remained the same, but the quality is vastly different.

When we turn to the input half of the ratio, we go from bad to worse. There are many elements, all working in concert, that make up the thing we call input, the most obvious of them being capital, management, technology, raw materials and other resources, and, of course, man hours of work.

We at Standard Oil, working closely with some outstanding economists, have been making an intensive study of this subject for some time, and the most important fact we've come up with is this: The various input elements are so closely interrelated that it is impossible to pull out any one or any combination of them and precisely assess its place in the over-all picture.

Theoretically, it might be possible to set up some laboratory experiments that would approach such an assessment. For example, we could take some specific manufacturing operation and vary isolated elements in it to see their effect on the production rate. First we might vary the capital investment by differing amounts, holding all the other elements constant. We might then vary the man-

agement techniques to be applied, again holding all the other elements constant.

Even if we did that, however, we would get only the answers to fit the particular theoretical situation we had set up in the first place—and these answers wouldn't necessarily apply in other situations. Doubling the number of man hours in a horse-shoeing operation, for instance, might well double the production rate; however, doubling the number of man hours in a petroleum refinery might not affect the production rate at all. But even more to the point is the fact that in practical operations we can never come even remotely close to the experimental conditions of a laboratory test. There is never a time when only one of the many elements that together go to make up input is being varied; several are constantly being varied at the same time. In fact, some leading economists have said flatly that to determine what contribution any one element of input has made to increased output is a problem that is insoluble "even in theory."

How Labor Views Productivity

Nevertheless, labor leaders plainly have not let themselves be halted or even delayed by this fact. Instead, they have worked out their own unsupported and completely inadequate definition of productivity. With ruthless oversimplification of the facts, they have decided to ignore capital and management and technology and resources as elements of total input. Productivity, they say, simply equals the value of all goods and services divided by the man hours of work.

But this is a stone-age definition of productivity. Such a partial ratio does not and cannot represent productivity —all it represents is output per man hour. What this definition actually implies is that all elements of input are kept constant except for man hours of work and as I have already pointed out, it is impossible to calculate input on this basis.

In an effort to lend at least the appearance of objectivity to their definition, however, labor leaders frequently cite the Bureau of Labor Statistics index, "Output per man hour production workers or nonsupervisory employees in manufacturing," as a measure of productivity. By definition this index is limited to the man hours of production workers or nonsupervisory employees in manufacturing. Another index that has gained attention is a recent BLS revision of the production worker series that includes certain categories of nonproduction and supervisory employees in manufacturing. However, this index also has limitations. In both indexes, there are sizable groups of employees left out—salesmen, researchers, administrators and managers—who are an important part of industry. And neither of these indexes covers the service trades, the professions, or agriculture.

In fact, in the *Monthly Labor Review* for May 1954, the BLS itself pointed out, "The indexes do not measure the specific contribution of

labor." Yet union leader after union leader goes on trying to maintain the fiction that the index *does* measure what the Bureau flatly says it does not. On this foundation of sand rest the elaborate cases for automatic annual pay increases that go on *ad infinitum*.

But if these union arguments were the only things we had to worry about, the productivity formula might not occasion us too much concern—after all, union leaders often make strange claims.

The fact is, however, that many managements have fallen into the union's way of thinking and bought their shabby line of goods. Even when management continues to argue about the numbers involved, it seems to go along with the essential fallacy in the union presentation, feeling, as the union leaders plainly do, that there is some mysterious magic in the very word "productivity."

No Ceiling in Sight

Of course, the initial lure of the productivity formula is understandable—it seems to offer such an easy way out of all the hard wrangles over wages at the bargaining table. By agreeing on a statistic that justifies an automatic wage increase, whether it be 2 or 6 or 22 per cent, we can all go on to more important things. Well, if a man persuades himself that he has found Utopia, he can hardly be criticized for that. But he can be criticized if he goes on insisting he is in Utopia when all the facts clearly show that he is some place else.

The fact of the matter is, productivity-formula bargaining is strictly a one-way street. The moment management accepts the productivity formula, with or without cost-of-living escalation, it is committed to perpetual automatic increases, and there is no ceiling on these increases, only a floor—the floor that the formula itself establishes. Experience has shown that the unions invariably use the increases dictated by the productivity formula only as a springboard for further demands. What the formula insures they take for granted and proceed to go on from there.

A case in point here is the automobile industry—far from freeing themselves from the tough job of realistic wage bargaining by accepting the productivity formula, the managements of the automobile companies bought themselves new and worse headaches. At the same time they and other managements that fell into the trap of the formula also bought an added measure of inflation for the nation as a whole.

It is worth remembering that, in the 1957-58 recession, we saw repeated instances where wage increases dictated by the automatic application of the productivity formula caused prices to hold steady and even, in some cases, to rise at a time when price *cuts* might have been just the thing to stimulate recovery.

Thus, eyeing the sad past of the productivity formula, we can only conclude that it has no reasonable future—the formula doesn't work be-

cause it can't; its monstrous defects are built into it.

And suppose, for the sake of argument, that someone eventually comes up with convincing proof that our increase in productivity has averaged, say, 2 per cent a year for the past half century. This fact would still tell us nothing about the economic performance in any given year. In 1956-57, for example, most economists agree that there was no increase in productivity; in fact, there was probably a decline, though no one can tell for certain. This was for the economy as a whole. But the experience of individual companies in this respect was undoubtedly as individual as the company itself. No matter what the situation was for the whole nation, in some companies there was almost certainly a gain; in others a loss.

The Key Question

No index exists that answers the key question: Is the increase in worker productivity sufficient to cover increased wage costs? This question must be answered not only for the nation as a whole, but also for company A and company B, and all the other individual companies that together make up our economy. Any attempt to reduce wage negotiations to the mechanical application of a formula can lead to only one end—the disappearance of free enterprise management. And if that goes, in its place we shall have regimented management under government control. If that happens, we shall have only ourselves to blame. For if, instead of exercising its decision-making responsibility, management prefers to fall back on some BLS index, its intellectual bankruptcy will be plain for all to see.

The fact of the matter is, there is no escape from the tough job, year after year, of establishing a realistic wage policy. In particular, management must ask—and find the answers to—these four questions:

1. What are our manpower needs?
2. Does the current labor market offer an adequate supply of the skills we require?
3. How do our rates compare with those paid by other local employers—are they high enough to insure competent workers?
4. What about our sales volume, prices, competition, and profits—regardless of statistics about the GNP or the performance of the economy in general?

Of these four questions, the last of course, is the most important. The company that bases its wage policy on the answer to it will never exactly be popular with union negotiators—but since when has it been management's first obligation to curry the benevolent favor of the union leadership? For that matter, is the desire to lessen the tensions of contract negotiations any possible excuse for failing to face the hard facts about the productivity formula?

Management's primary obligation, as I conceive it, is twofold: (1) It must see to it that true productivity continues to increase for the further

enrichment of the nation's economy, and (2) it must also see to it that the benefits of true productivity gains are shared equitably by all who are involved in the productive operation. In the battle for solvency and sound money, management might well begin by tending its own shops and making certain that its policies are not adding fuel to inflation's fire. And this, surely, calls for management's putting a lasting end to the myth of the productivity formula while there is still time to do so.

Mental Powers and Aging

CONTRARY TO POPULAR belief, new research indicates that a person's mental powers do not decline after middle age. In fact, a recent recheck of a group of testees, 30 years after they took their first intelligence tests, showed that the group as a whole attained a considerable gain in average intelligence scores and not one person scored lower than he did on the first attempt.

The widespread belief in the inevitability of mental decline after 40 or 50 years of age springs from tests conducted on cross-sections of the total population several years ago which showed that younger people were more intelligent than their elders. But to draw such a conclusion from these tests is erroneous for several reasons: (1) The tests failed to consider the rise in our national educational levels which resulted in the younger testees having had more formal education than the older age groups with which they were compared; (2) the younger groups had been more exposed to such tests, while the older people, not having been previously subjected to batteries of intelligence tests, may have found them hard to take; and (3) the tests were not used to measure changes in the same person over a period of time, but rather to compare the performance of different people of different ages.

According to research conducted at the University of Michigan's Division of Gerontology, lazy habits of thinking can cause mental deterioration. Such habits are probably as great a threat to continued mental health as any physical and emotional mishaps that a person may suffer. Attitudes, too, have their effect on a person's ability to learn—people who regard mental decline as inevitable and shrink from outside contacts and interests will, in all probability, realize their fears. On the other hand, researchers since 1928 have shown that people who maintain a continued interest in formal education after 50 can do just as well as their 20-year-old classmates.

All those who will be in the labor force in the coming decade have already been born—but not enough of them were born at the right time. What steps should management take now to meet the coming manpower shortage?

The Challenge of the 1960's: Manpower Management

CHARLES A. MYERS

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At a time when we have a very sizable unemployment problem on our hands, it may seem strange to suggest that one of the major challenges facing American management in the next 10 or 20 years is the effective utilization of *scarce* manpower. I make this statement, however, on the dual assumption first, that while we shall have occasional business recessions, we shall never again permit so serious a depression as we had in the early thirties; and second, that the American economy will continue to grow at the same rate as it has done since the end of World War II. We need only take note of the vast expenditures for industrial research in recent years to realize that the American economy will see many new products, new industries, and new jobs in the years ahead. Over the long pull, therefore, the facts encourage optimism, not pessimism.

Nevertheless, economic projections are notoriously hazardous. Indeed, we have learned that even when we already know the age composition of the population, we cannot predict the size of the labor force for a decade ahead with any great accuracy. In 1948, for example, a careful estimate of the probable size of the 1955 labor force made for the Social Science Research Council came up with a total of 61.1 million—nearly 8 million less than the approximately 69 million people who actually were in the labor force in 1955. (Of these, 63.2 were employed and the rest were either in the armed forces or were unemployed.) Where did the projection go astray? The disparity was due partly to an underestimate of the nation's economic

growth and partly to the fact that the actual participation rates of both men and women in the labor force were higher in 1955 than the rates that had been estimated eight years earlier. In other words, when jobs were available, proportionately more men and women in the total population went to work than ever before.

By using different participation rates we can, of course, arrive at different estimates of the size of the labor force in the years ahead. It may be well to point out, therefore, that the estimates set forth in this article are on the conservative side and that the size of the labor force in 1965 and 1975 may be even higher than is assumed here.

With this background, let us take a look at the labor force six years hence (1965) and, more briefly, for the decade following (to 1975).[1] Much of this picture has already been determined by past events. As Peter Drucker has pointed out, in *America's Next Twenty Years:*

> The major events that determine the future have already happened—irrevocably. Everybody who will reach marriageable age during the next 18 or 20 years has by now been born. Everyone who will join the workforce within the next 18 or 20 years has by now been born. And so, obviously, has everyone who will retire. The economic population of the next 20 years—its numbers, its age and sex distribution—is not just predictable; *it is already in being . . .*
>
> It is more than possible . . . that a continuing feature of the next two decades will be a labor shortage—and that the basic problem of the period will be not unemployment but inflation.

The "population explosion" of the post-war period is a matter of common knowledge: by the end of the thirties, we had 132.1 million people, and by the end of the forties we had 151.7 million, or an increase of nearly 15 per cent. The Department of Labor estimates that by 1960 we shall have 179.4 million and by 1965, 193.3 million. The pressures this population will put on our secondary school system and on our colleges and universities are obvious. But what will be its implications for the labor force—the people working, available for work, or looking for work?

Assuming that our Gross National Product continues to grow at its present rate we shall have a GNP of $560 billion (at 1955 dollars) in 1965, as compared with $391 billion in 1955. Even if there is a 6 per cent reduction in working hours, this level of output will require 74 million workers as compared with 63.2 million in 1955. Assuming that another 2.8 million will be in the armed forces and that there will be 2.4 million unemployed (about the minimum figure that can be used to account at any one time for those changing jobs, temporarily out of work, and so on) this gives us a total labor force of 79.2 million. However,

[1] Most of the data used in this paper are taken from various studies of the Bureau of Labor Statistics, U. S. Department of Labor, especially "Our Manpower Future, 1955-65; Population Trends—Their Manpower Implications" (1957), and Sophia Cooper, "Labor Force Projections to 1975," *Monthly Labor Review,* (Dec., 1957), pp. 1143-1450.

the net figure of 74 million is the one we are concerned with here.

Occupational Distribution of the 1965 Labor Force

Now, how will the 74 million people actually at work in 1965 be divided among the various occupational groups? If past trends continue, we can expect that, in comparison with 1955, some occupational groups will grow and others shrink. The anticipated changes (i.e. percentage increase or decrease over the 1955 totals) have been estimated by the Labor Department as follows:

Occupational Group	*Percentage Change*
Professional and technical	+37
Proprietors and managers	+22
Clerical and sales	+27
Craftsmen (skilled)	+24
Operatives (semi-skilled)	+22
Service workers	+12
Laborers	− 3
Farmers and farm workers	−15

This projection is based on the assumption that continued technological change, of which automation is the most striking example, will reduce the need for unskilled laborers and that mechanization and increased productivity will also make it possible to release additional workers from agriculture. On the other hand, technical and managerial skills will be in greater demand—hence the proportionately high anticipated increase in professional and technical personnel.

Studies now being conducted at the Industrial Relations Section of Princeton University show very clearly that the growth of large American companies over the past decade has been accompanied by a marked increase in the proportion of managerial, technical, and supervisory personnel to the total number of people employed. While some accountants may choose to call this the growth of "non-productive overhead," the truth seems to be rather that, as any organization or any industrial society grows, the technical and managerial manpower resources required to run it become relatively more important.

This trend holds true not only in manufacturing, but in other occupations as well. In fact, projections to 1965 and 1975, based on the trends between 1947 and 1956, suggest that while manufacturing employment may increase by 10 to 20 per cent, the greatest increases will be in construction, trade, finance-insurance-real estate, service industries, and government.[2] Technical, managerial, and administrative skills are required in the expansion of each of these categories. Furthermore, the greater expansion in the last four groups listed reflects another characteristic of economic development: as an industrial society grows, the so-called tertiary industries (trade, finance-insurance-real estate, service, and government) grow relative to manufacturing, transportation-public utilities, and mining (which be-

[2] Projections to 1975 have been made by Prof. William H. Miernyk, Director of the Bureau of Business and Economic Research at Northeastern University and Visiting Professor in the Department of Economics and Social Science at M.I.T. during 1957-58, in "Labor Force Changes," *Georgia Business*, Vol. 17, No. 12 (June, 1958), pp. 1-7.

tween 1947 and 1956 actually declined in total employment). Of course, the absolute decline in the numbers employed in agriculture today as compared with 50 years ago is well known and this downward trend is expected to continue.

Age Distribution of the 1965 Labor Force

Now, on the basis of what we already know about the age composition of the population, who actually will be filling these 74 million jobs? Several points stand out from an analysis of the 1955 data and the 1965 projections:

1. As a result of the baby boom of the forties, there will be many more young people aged 14-19 and 20-24 in 1965 than there were in 1955. Though large numbers of these will be in schools and colleges, it is estimated that there will be nearly 4.5 million more workers in these age groups in the 1965 labor force than in 1955. Of these, 2.7 million will be males and 1.8 million females.

2. Owing to the relatively low birth rates of the depression years, the numbers of young adults in the prime age groups, 25-34 and 35-44, will be about the same in 1965 as in 1955. In other words, there will be a relative shortage of workers in these age groups.

3. Compared with 1955, the 1965 labor force will show another large increase in the age groups of 45 and over, especially in the 45-54 group.

4. Over 4 million of the total increase in the labor force of nearly 10.5 million between 1955 and 1965 will have to come from women over 35. Many of these will be married women over 44—the age when children are no longer so important a factor in keeping women at home.

Some of the implications of these population and labor force changes have been suggested in the preceding comments, but we are now ready to consider more carefully just what all this means for management—for the men in managerial and administrative positions in business and industry who will have to make decisions on the utilization of manpower resources in the next six years.

Implications for Management

On this score, the following points deserve emphasis:

1. We shall have a better-educated labor force than ever before. There will be more high school and college graduates available for work, and these may be just the groups to meet the increased demands for professional and technical personnel, and for clerical and sales employees—the occupational groups in which the largest percentage increases are anticipated by 1965. In other words, white-collar workers will be more plentiful and more in demand than blue-collar workers. As noted above, this is a reflection also of the probable impact of automation, although recent research indicates that some routine jobs (such as key-punch operations, card sorting, etc.) are likely to continue along with the increase in more skilled jobs, such

as maintenance of and programming for the automatic machines.

2. The impact of automation, which is, in particular cases, to eliminate jobs, will come at a time when there are relative manpower shortages in the prime age groups of 25-44. We cannot even be certain that the larger number of young people entering the labor force between now and 1965 will become permanent employees for, as we know, many young girls take jobs only until they get married. Thus, some insurance companies consider it necessary to introduce automation in the office now to avoid chronic labor shortages in the years ahead, just as the telephone companies found that the only way to expand their services to meet an ever-growing demand was to introduce the automatic dial system. These points need to be re-emphasized at a time when automation is considered a threat to employment.

3. The increased numbers of younger people in the labor force by 1965, as well as the larger proportion of women over 35, will require some restructuring of jobs, possibly to arrange partial shifts to use part-time workers who either cannot or do not want to work a full day or shift.

4. The shortages in the prime age groups by 1965 will put a greater premium on the better selection, placement, and training of workers, especially if a company wants to avoid labor turnover. Since it will be easier for people in these age groups to get other jobs if they are dissatisfied, management will need to pay greater attention to how they are placed and how they are handled on the job.

In these groups will be the young professionals, the skilled craftsmen, the supervisors, and the junior executives—all key people in any organization. And here it is worth pointing out that the shortages in this group will not only be *relative* to other age groups by 1965; there will actually be 700,000 fewer men aged 25-35 in 1965 than there were in 1955. Again, perhaps, it should be emphasized that this is no wild guess; it is based on the number of people in those future age groups who are already born. This implies that management would do well to pay particular attention to developing and retaining those key people who, by 1965, will be between 25 and 34 years of age—and bear in mind also that the picture is only slightly brighter for the next prime male age group, 35-44.

5. These shortages may also call for changes in job structure to make jobs more interesting and satisfying. There is increasing recognition that routine, specialized, repetitive jobs bring frustration to many people. What has been called "job enlargement"—adding varied and related duties to a job rather than over-specializing it—offers promise of better morale and better productivity, as companies such as IBM have found. Managers need to think more about making jobs as big and as interesting as men can handle, as whole men, and less about the pseudo-engineering approach which considers man a machine and uses only his limbs

for the performance of routine mechanical operations. Not all people dislike routine, repetitive jobs, but I believe that many more do than the industrial engineers assume when they lay out their production lines and time study individual workers. Fortunately, automation may change much of this, by eliminating many of the dull jobs now performed by human beings, and requiring more maintenance and service workers instead. But management needs to be in the forefront of these developments.

6. The relative shortages in the prime age groups will put a premium on the more effective use not only of younger workers and older married women, as we have seen, but also of the so-called "minority" groups in the labor force—Negroes, other minority racial groups, and last but not least, older workers over 60 or 65. If a man is willing and able to work, and over the normal retirement limit, it may be a luxury we can ill afford by 1965 to require him to quit work under a compulsory retirement plan.

7. Finally, the expectations of a better-educated and better-trained labor force will demand a management that can help to meet these expectations both in the plant and in the office by developing more interesting jobs and by providing the kind of leadership that produces willing and enthusiastic employees. People who have learned in schools and colleges that democratic values are important in our society will not be satisfied with the autocracy that still passes for management supervision in some of our plants and offices. There will be even more emphasis on management development in those companies that want to stay ahead of their competitors in building an organization of people to produce a product or a service at a cost which will attract more customers. Good managers will continue to be the scarcest of our human resources, and personnel administration, as a line management responsibility with the advice and assistance of a staff specialist, will continue to be a crucially important management function.

The Picture for 1975

In short, the job facing management in the years ahead to 1965 is going to be more difficult than it has been in the past, at least so far as the utilization of manpower resources is concerned. Now, does the picture look any brighter after 1965? The Department of Labor's labor force projections to 1975 [8] show that between 1965 and 1975 the pattern will be somewhat altered from the preceding decade, as we would expect. The younger age groups of 1955-65 will be in the 25-34 group by 1965. Presumably by that time they will be better trained and more experienced, and the shortage of workers in this age group in the 1955-65 period will be less acute in the following decade. On the other hand, the depression babies will be in the 35-44 group by 1965, and this group will be smaller from 1965 to 1975 than the same group in 1955-65. Finally, be-

[8] Sophia Cooper, *op. cit.*

tween 1965 and 1975, the under-25 age groups will continue to increase, but not nearly so fast as during 1955-65.

Thus, while the composition of the labor force will be different between 1965 and 1975, the same pressures will be present on management for more effective utilization of manpower. An increasing number of companies are gearing up for this challenge, especially by improving the training and development of their own managerial and supervisory ranks. It is indeed high time that more companies began to think about the manpower problems ahead in the next decade and started taking the steps that are necessary to meet them.

How to Increase Creativity

BUSINESS already has more creative talent than it is using effectively. Creativity is stifled by many pressures which work both within the individual and within the organization. But something can be done to increase creativity in an organization.

Management can adopt tests which will identify the people who give in readily to group pressures and the people who don't.

Management can also develop groups which counteract the negative consequences of conformity. Participation in decision making can be used to shift the goals of groups to positive ends. Groups can be formed in which originality becomes a major goal. Procedures can be installed to insure a full hearing of minority opinions. Differences in status can be reduced, made less obvious; the place a member holds in the hierarchy can be consciously eliminated as a factor in judging member contributions. Groups can be formed which bring together many different kinds of people; originality seems to flourish under these conditions. Groups can be made aware of the pressures to conform they bring on individual members, and they can work to reduce those pressures. Discussion leaders can be trained. Experts can be used as resource people.

If management realizes the impact of conformity pressures and begins to counteract their negative aspects, then some of the ready reserve of originality should begin to appear. The impact of these reserves can be far-reaching and can pay off handsomely for the business which takes the time to find and free creativity.—*Creativity and Conformity: A Problem for Organizations* (The Foundation for Research on Human Behavior, Ann Arbor, Mich., 1958).

A series of studies carried out in four large companies pinpoints nine ways in which successful salesmen differ from unsuccessful ones.

How Successful Salesmen Behave: A Counseling Guide

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How does a successful salesman actually go about his job? In what way does his behavior differ from that of his less effective colleagues? The answers to these questions are clearly of prime importance to any company with a counseling program aimed at improving the performance of its sales force. Yet few empirical studies have been carried out in this area, with the result that the average sales manager charged with the responsibility of guiding his men toward higher levels of productivity mostly has to proceed in a hit or miss fashion. Seldom does he have any systematic plan for his individual counseling sessions or much assurance that his advice and recommendations are sound.

Aware of this defect in its counseling program, a major household appliance manufacturer requested us some time ago to carry out a study that would provide an empirically validated basis for a guide that could be used by the company's field sales managers in counseling their sales staff. Since that time, we have carried out similar studies in three other large companies—a meat packer, a millwork producer, and a manufacturer of agricultural equipment.[1] Though the four companies differ in their products, or-

[1] All the four companies studied have nationwide sales organizations and are alike to the extent that their field salesmen sell directly to dealers rather than to consumers. Among the functions performed by these salesmen are establishing, renewing, and terminating dealer franchises, training a dealer's sales and/or service personnel, and keeping him informed of the company's products, policies, and programs. From time to time, the salesman may also organize and conduct sales meetings for dealers to discuss new products, competitive activity, special promotions, and the like. The behavioral characteristics described in this article refer to salesmen of this type and it is not suggested that they necessarily apply to all salesmen.

ganizational structure, and methods of operation, the findings of the four studies are sufficiently alike as to suggest that they may be generally applicable to the wholesale selling field.

This article will outline the procedure used to develop the counseling guide for the appliance company and go on to present a composite of the findings of all four studies. It will conclude with an account of the counseling program that was set up in the appliance company, together with some evidence of its effectiveness, as determined by a follow-up study made one year later.

From the outset, it was recognized, of course, that to be practical a counseling guide must confine itself to behavioral traits and operation methods that can be established, changed, or eliminated within a reasonable period of time by an untrained counselor. Such things as intelligence, interests, physical characteristics, long-established personality traits, and so on are not readily modifiable, if indeed they can be changed at all. Furthermore, it was felt that the behavioral traits had to be overt to the extent that the sales manager could recognize their presence or absence and observe changes in them over a period of time. Lastly, it was considered desirable that the various behavioral items should be graded in importance so that the sales manager could stress the more important ones in his counseling sessions.

With these prerequisites in mind, the first step was to obtain detailed descriptions of the behavior of salesmen covering a wide span of effectiveness. In this phase of the study, 20 field sales managers were asked to submit descriptions of the two best and the two poorest salesmen in the present or recent employ of the company whom they had been able to observe closely. The salesmen so described were not to be identified and it was made clear that the written reports would not be made available to anyone in the organization.

Design of the Study

The sales managers were asked to describe what the salesman did or did not do in his sales efforts, his home and social life, company meetings, etc., and were cautioned against omitting an item of behavior because it seemed to them to be either commonplace or too unusual, undesirable perhaps, or merely inconsequential. Consequently, their reports, along with much useful, descriptive information, contained a number of value judgments, vague, uncounselable statements, and repetitions which could be either modified or eliminated. The statements that remained—descriptions of distinct segments of behavior relating primarily to sales activities—were then grouped into clusters on the basis of their similarity of content. One cluster, for example, might consist of those items dealing with organizing an efficient customer-contact route schedule and another of the items relating to the investigation of potential dealers before franchising. All the items, some 250 altogether, still in the sales managers'

own words, were then randomly assembled into a check list.

The second phase of the study took place at a regularly scheduled sales managers' meeting for which each manager had been instructed to "think about" the best salesman he had ever known, a salesman of average ability, and the poorest salesman he had ever known. (These were to be three actual men rather than composites of several good or poor salesmen the manager happened to have known, and his associations with them were to have been close and recent enough for him to make informed decisions about their behavior.)

At the meeting, each manager was asked to read each item on the check list and indicate whether it was generally characteristic of one or more of the salesmen he had selected. (If it characterized none of them, he had to leave the item blank.) He was to "call them as he saw them," regardless of the fact that a negative-sounding statement might very well describe his "best" salesman.

Since the sales managers could check each item as characterizing any one, or any combination, or none of the very good, average, or very poor salesmen they had known, it was possible to determine, by statistical analysis of the completed check list, (1) the frequency with which each behavioral item characterized the three classes of salesmen and (2) the degree to which it differentiated among them. These two indices—frequency of characterization and degree of differentiation, both expressed as percentages—yielded a set of quantified data[2] from which we were able to compile a check list for the use of sales managers in counseling their men in the field. With the check list as a guide, the sales manager could thus stress or encourage the adoption of those forms of behavior characteristic of successful salesmen, and at the same time try to eliminate the behavioral aspects which appeared to be a bar to effectiveness.

An account of how the counseling guide has been used in the appliance company is given in the concluding section of this article. At this point, we turn to consider the over-all findings that emerged from an analysis of the behavioral items obtained from all four studies.

Characteristics of the Better Salesman

All the items were divided into clusters based on the similarity of the behavior described—a process that yielded 35 clusters containing four or more items. The degree of differentiation of each cluster, or—as we labeled it, discrimination value (DV)—was obtained by calculating the average difference between the per cent of times each item in a cluster was checked as characterizing the best salesmen and the per cent of times it was checked as characterizing the poorest. For example, in a three-item cluster, if the sales managers had checked the first item as characteristic of 95 per cent of the best

[2] The quantifiable findings yielded by this procedure distinguish it from the "critical incident" approach originally developed by Flanagan and since used in various forms by a number of researchers.

salesmen and 5 per cent of the poorest, the second item as characteristic of 85 per cent of the best and 15 per cent of the poorest, and the third as characteristic of 82 per cent of the best and 2 per cent of the poorest, the average difference of the three items (DV) would be 80 per cent. In other words, the higher the DV, the more sharply the behavior cluster in question differentiated between the salesmen at each extreme.

This analysis showed that the behavioral clusters which most distinguished the best from the poorest salesmen were:

Cluster	*DV*
1. Customer analysis	80%
2. Setting goals and quotas	75
3. Keeping customers informed	73
4. Franchising activities	72
5. Persistence	72
6. Analysis of sales effort	67
7. Knowledge of competition	67
8. Keeping company informed	64
9. Coverage of territory	64

Following are some explanatory notes on each of the above:

1. *Customer analysis.* The best salesman analyzes his customer—in the companies studied, the individual dealer—in terms of his market, competition, financial position, personality, and so on, and makes his approach in the light of this analysis. This is not a hasty appraisal made just before he calls on the dealer—it is actually a careful study which enables the salesman to use a tailor-made sales presentation for each of his customers. At the same time, he is flexible enough to be able to change his approach during the sales presentation, if necessary.

2. *Setting goals and quotas.* The best salesman works out his own intermediate quotas and goals. These are explicit to the point of including regions or dealers, products, dollar amounts, target dates, and the like. He then paces his efforts over a set period to attain his objectives. He has a realistic quota he plans to sell when calling on each customer.

3. *Keeping customers informed.* The best salesman keeps his customers fully informed about their responsibilities as franchise-holders and the degree to which they are fulfilling their obligations. When franchising a dealer, he carefully explains to him his obligations and responsibilities to the company and the company's obligations to the dealer in return. He keeps his customers up to date on changes in policy and procedures and periodically reviews their progress with them.

4. *Franchising activities.* The effective salesman is constantly on the lookout for promising dealer-prospects. He makes a careful investigation of each potential franchise-holder, noting his experience, reputation, financial backing, personnel, etc. Following his periodic reviews of each franchise-holder's progress, he does not hesitate to disfranchise a dealer, establish a new franchise, or set up multiple franchises when he detects gross ineffectiveness, inactivity, or a serious violation of company policy.

5. *Persistence.* When the best salesman starts something, he stays with it. He keeps after his customers until he gets them to embark on a promotion but is careful not to start one unless he can see it through to a satisfactory termination. He follows up after sales meetings to make sure that orders are delivered as promised. He is also persistent in his attempts to get orders and is not easily discouraged by failure.

6. *Analysis of sales effort.* The best salesman analyzes the results of promotions, sales meetings, dealer contacts, sales presentations, etc., to determine why a particular effort succeeded or failed, where it was weak, and how it could have been improved. When the evaluation indicates the advisability of a change in methods or behavior he endeavors to make the necessary modification.

7. *Knowledge of competition.* The good salesman knows his territory and is alert to the successes and failures not only of his own customers but of their competition as well. He knows how competitive promotions have fared and keeps tabs on the financial condition of rival dealers. This knowledge of competitive activity is of considerable assistance to him when he is changing franchises or establishing multiple ones and often enables him to help his customers meet the competition more effectively.

8. *Keeping company informed.* The better salesman keeps his home or branch office well informed about the significant activity in his territory. He reports on his customers' competitive position and general activities, including such matters as whether a dealer is in financial difficulty, or neglecting the company's products in favor of others, or whether he is doing an adequate job of servicing, how effective his promotional efforts are, and so on. He advises the company on how both its products and the products of its chief competitors are being received, what his dealers and their customers are saying about them, as well as the steps he has taken to counter competitive activity and to what effect. He is willing to pass along to other salesmen ideas and techniques he has found successful.

9. *Coverage of territory.* The best salesman works out a route schedule which enables him to call on dealers regularly and with a minimum of back-tracking, duplication of effort, or wasted time and mileage. He keeps his schedule somewhat flexible to allow for emergencies but is sufficiently well organized to know in advance where he will be on any given day in the near future.

It should be stressed that these nine clusters are listed in descending order of the degree to which they discriminate between best and poorest salesmen. However, this sequence should not be taken as indicating that the greater the degree of discrimination, the more the activity in question contributes to selling effectiveness. Some behavioral traits which seem to be characteristic of all salesmen regardless of their performance and, therefore, show little difference between the best

and poorest salesmen (low DV), may actually be more important factors in successful selling than clusters with high discrimination values.

Least Discriminating Factors

At the other end of the scale, we may group the nine clusters showing the least discrimination value between the best and the poorest salesman:

Cluster	*DV*
1. Social activities	12%
2. Drinking habits	16
3. Personal traits	23
4. Home life	25
5. Group activities	31
6. Discrimination among customers	34
7. Honesty	35
8. Financial standing	36
9. Discrimination among products	36

1. *Social activities.* It seems to make little difference whether the salesman socializes with his customers or not. Nor does it seem to matter whether he tends to associate with people in the same line of business or prefers the company of those in other fields. And whether or not he tries to establish prominent or influential social contacts seems to be equally immaterial.

2. *Drinking habits.* This cluster must be interpreted with some caution. It includes such items as amount of drinking, drinking while on the job, and drinking to a point where it interferes with business. The small difference between the best and the poorest salesmen in these respects may be due to the fact that problem drinkers have already been eliminated by pre-employment screening. This supposition is further reinforced by the fact that between 70 and 80 per cent of all salesmen in all four companies were listed as drinking moderately or not at all.

3. *Personal traits.* In personal characteristics, habits, and manners, little differentiation between good and poor salesmen was apparent. However, since this category included such items as swearing, use of poor grammar, personal appearance, and the like, the relative infrequency of some of these characteristics among the type of salesmen studied may have accounted for the small difference noted.

4. *Home life.* The home life of the salesman also has a rather low discriminative index. Though the poorer salesmen do tend somewhat more often to have unhappy home lives and discontented wives, the difference is not great. Actually, while a miserable home life may make a salesman discontented and unhappy, and so interfere with his business, it may also keep him on the road away from home, so that he sells more than he otherwise might.

5. *Group activities.* This cluster shows relatively little difference between the best and the poorest salesmen. While the better salesman does seem to attend church more often, and to participate in civic and fraternal affairs rather more frequently than his less successful colleagues, these activities appear to differentiate between the two groups far less than some others.

6. *Discrimination among customers.*

There is some tendency, but a quite inconsistent one, for the better salesmen to spread their efforts equally among their customers. The poorer salesmen tend to concentrate rather on their favorites, or customers within easy reach, or urban rather than rural dealers, or those with present rather than potential business. However, in two companies it appeared that the better salesmen concentrated on large accounts and somewhat neglected the smaller ones, while in the other two companies no such tendency was noted.

7. *Honesty*. The poorer salesmen seem to be somewhat less honest than good ones, but again this cluster is far less discriminating than most.

8. *Financial standing*. The better salesman seems to have a somewhat better credit rating, to be less in debt, and to manage his finances rather better than the poorer salesman. But this, of course, may be simply due to the fact that he is better off.

9. *Discrimination among products*. The better salesman apparently tends to sell his company's full line of products, whereas the poorer salesman seems to concentrate on a few favorite items. But here again, the degree of differentiation is not equally marked.

The clusters described above represent the extremes of discrimination. In addition, there were 17 clusters of items in the middle range of discrimination, several examples of which are listed below. (The sequence has no significance.)

1. Work habits—steady versus sporadic effort.
2. Reliability—living up to one's word or promises.
3. Asking for orders.
4. Knowledge of product.
5. Maintaining and submitting complete, accurate records.
6. Attention to customer's convenience.
7. Attention to detail.

In evaluating these findings, it must be recalled that the original study was undertaken to develop a counseling guide which could be used by field sales managers to improve the performance of their poorer salesman. Hence the activities which differentiate sharply between good and poor salesmen and call for the most counseling were investigated. As has been pointed out, the studies themselves throw no light on the question as to how far a particular cluster, despite its apparently high discrimination value, actually contributes to successful selling. Nevertheless, we feel that a very high degree of correlation would probably be found between this hierarchy of clusters based on discrimination values and one based on judgments of their importance in selling. At all events, in a subsequent investigation with salesmen themselves, we found that the highly successful ones tend to rank these clusters in much the same sequence as did the sales managers in the studies reported here. The less successful salesmen, on the other hand, showed a much greater departure from the above listing in the ranks they assigned to the cluster descriptions.

For the benefit of companies that may be interested in applying the results of this research, the experience of

the appliance company in which the first study was made may serve as a general guide.

Applying the Findings

A check list of 60 items selected from those clusters which differentiated most sharply between the best and the poorest salesmen in the company was compiled. This was passed along to the sales managers as a "counseling guide." The sales managers were instructed to observe each of their salesmen periodically and check his behavior against the items in the list. At his counseling sessions, the sales manager was urged to direct his efforts toward encouraging and assisting the salesman to adopt the behavior patterns which were known to be typical of successful salesmen and helping him to minimize or eliminate patterns which had been found to interfere with success. The salesman was not to be given the counseling guide and left to his own resources, and the sales manager was instructed not to try to review the entire list of items at any one time. As the salesman's behavior changed along the desired line, he was to be commended and other items of behavior were then to be selected for further counseling.

It should be noted that where a salesman's behavior already conformed to the pattern desired, he was to be commended for it, and that this commendation was regarded as no less important an aspect of the program than the counseling for change.

In short, the counseling guide was designed to provide a means for systematically observing a salesman's behavior, establishing a set of criteria as to what was desirable and undesirable behavior, pointing up which behavior patterns are more important to successful selling, and setting a framework for periodic reviews and counseling. It was also felt that not only would the salesman profit from the guidance he received, but he would also have the assurance that his sales manager and the company were genuinely interested in his welfare and success.

Approximately one year after the counseling guide had been given to the field sales managers, we undertook a preliminary follow-up study to assess the effectiveness of the program. Patterned interviews were held with eight district sales managers. Though this was, admittedly, a somewhat simple method of evaluation, we were able to draw from it the following conclusions:

1. The sales managers had found the check list a ready reference of behavioral items relating most directly to successful selling and a useful means of refreshing their memories before or during a performance review.

2. They also found that the check list had enabled them to adopt a more positive, factual attitude during a counseling meeting, because they knew that the behavior changes they were suggesting were endorsed by a sizable majority of the other sales managers in the company.

3. Some evidence was also forthcoming that positive changes in be-

havior can be brought about through the proper use of such a counseling check list. For example, one sales manager reported that one of his salesmen, after the importance of carefully planned coverage of his territory had been pointed out to him, had posted an area map in his study and now consulted it before making a trip. In this way, he had eliminated considerable back-tracking.

4. Though the check list had been intended to be used for counseling salesmen at all levels of effectiveness, its use so far has been limited almost exclusively to the poorer, marginal salesmen. But it is possible that with continued use sales managers will begin to extend its application further.

5. All the sales managers interviewed agreed that the check list had not been used as often as was intended, partly because of lack of time on their part, and partly because of lack of company funds to implement the program. But they were unanimously of the opinion that sales would increase if they had the opportunity and funds to work more closely with their men in the field.

6. The salesmen with whom the counseling guide has been used have reacted to it most favorably and seem to feel that definite steps are being taken to help them improve their performance.

The Two - Dollar Business Letter

IN 1938, it was estimated that the average business letter cost about 50 cents. Ten years later, Dr. Robert R. Aurner set the price at 75 cents. By 1952, the figure had edged past the dollar mark and, according to *American Business,* soared to $1.70 in May, 1957. Now the Family Economics Bureau of the Northwestern National Life Insurance Company sets it at an even $2.00.

Here's how Northwestern arrived at its estimate:

Item	*Estimated Cost*
Time spent by the average secretary per letter (includes taking dictation, typing, correcting, looking up words in the dictionary, coffee breaks, and so on)	$ .75
Executive's dictating time	.70
Stationery, typewriter ribbons, and other materials	.08
Postage and mailing costs	.07
Office overhead (rent, lights, filing, messengers, and so on)	.40
Total:	$2.00

Many organizations are now in the process of integrating their personnel record-keeping activities with their EDP systems. Here is an account of some leading applications of this kind—coupled with some words of advice for the company that is thinking of branching out along similar lines.

Personnel Records: Along the Road to Automation

PAUL DUKE

PERSONNEL DEPARTMENTS are becoming more and more cluttered with records. In addition to the voluminous details that must be maintained on each employee, companywide data on such matters as training, union status, seniority, merit ratings, grievances, job evaluations and descriptions, psychological test scores, absenteeism, turnover, and so on are increasingly being called for. Keeping track of all this detailed information is already a cumbersome and costly burden. As the workforce expands, it threatens to become overwhelming, unless more efficient methods are employed for providing speedy and accurate reports on all phases of the personnel department's activities.

In response to pressures for cutting costs and, at the same time, increasing efficiency, many leading companies have already made considerable progress in integrating their personnel record-keeping activities with their automatic data-processing systems. Other organizations are actively studying the problem, and many more would follow suit if they knew where to begin; but for some reason little guidance has hitherto been forthcoming on such applications. This article will explain how punched card and electronic computer systems can be used to provide the speed, accuracy, and efficiency now lacking in traditional methods of maintaining personnel records and will describe some company operations of this kind.

At the outset, it should be recognized that many personnel functions have already been reduced to processes that are essentially mechanical in nature. Thus, in hiring, applications are screened to sort out the most obviously desirable candidates, jobs are evaluated and their requirements analyzed to establish criteria for selection, and interviewers rely on patterned interviews or questionnaires to insure that

applicants are evaluated on a consistent basis; psychological test scores are correlated with job criteria to "match the man with the job"; and statistical analyses of turnover, absenteeism, and accident rates are tabulated and cross-correlated with department number, job classification, or age groups in order to provide guides for over-all company policy or to uncover specific problem areas. At the present time, record clerks mostly perform these operations by hand. They can, however, readily be accomplished by machines which can sort, compare or match recorded data, select specific information and cross-correlate it, tabulate and compare results, and finally, automatically print the results in almost any desired form.

The Basic Machine Functions

The basic machine functions required to perform these record-keeping duties are:

1. *Coding.* The assignment of numerical values to specific information. For instance, in coding an employee's educational background, numbers can be assigned to each of the following levels:

Grammar school credits
Grammar school graduate
High school credits
High school graduate
College or university credits
College or university graduate (Bachelor)
College or university graduate (Master)
College or university graduate (Doctor)

Information about the employee's marital, military, and job status, seniority, and so on can be similarly coded.

2. *Card design.* A typical IBM card, for example,[1] has 80 vertical columns numbered along the top. The horizontal rows are numbered along the left-hand side. For most purposes, rows 0-9 generally suffice, but there are two additional rows (generally known as 11 and 12) that can be used for special symbols or to facilitate alphabetical punching. In designing the card, specific information is assigned to each column or group of columns. For example, columns 1-26 might contain the letters of the alphabet, columns 27-36 the numbers 1-9, and the remaining columns such data as the employee's name, address, age, educational level (indicated by its code number), and educational area. The card is both punched and printed to allow for machine and hand sorting.

3. *Punching.* The transfer of information from source documents such as application blanks, job requisition forms, and merit rating reports to the punched card. This is generally done with a key punch machine, similar to a typewriter, which punches and/or prints information on the cards. It can also be done automatically; i.e., information can be transferred from card to card, to and from the same card, or from a group of cards to a single card by machines.

4. *Selecting and sorting.* These operations can also be carried out by machines. A specific employee's card can be selected from a deck containing the cards of all the company's employees.

[1] Though the IBM card has been described here for purposes of illustration, the various other punched card systems in general use follow similar principles.

Any characteristic that has been coded and punched on a card can be selected in this manner. Mechanical sorting can place a file of employees' cards in any order desired, such as by age, seniority, or job classification; or the cards may be sorted according to departments and then subdivided by these classifications. Specific characteristics can also be selected or matched with other characteristics.

5. *Tabulating and computing.* In conjunction with selecting and sorting, specific breakdowns can be made. For instance, the number of employees in a given job classification can be counted and then further subdivided by sex.

In addition to the above machine functions, it is also possible to print detailed lists of selective information by passing the cards through an accounting machine. For example, if the employees' cards are sorted and placed in order of seniority, lists of employees can be printed in this order. Through more detailed sorting processes, lists can be printed not only by order of seniority (or some similar criterion), but also further subdivided by department, age, job classification, and the like.

Of course, this brief description of the basic machine functions is necessarily oversimplified. It would be impossible, within the scope of this article, to describe in detail the mechanical processes required to perform such complex personnel functions as selection and placement. The foregoing summary should be sufficient, however, to show that the punched card can serve as an information medium as readily as printed documents and that the card and machine processes can be made to perform many of the rudimentary mechanical functions now being done by record clerks. For instance, a card containing a new employee's application information and psychological test scores can be correlated with a deck of cards containing detailed job requirements. Through machine operations, the applicant's card can be compared with each job card and the machine can be made to produce the job or group of jobs for which the applicant is best suited. It is then possible for the interviewer to match the applicant to the job, or vice versa.

Many companies already maintain at least some of their personnel information on punched cards and/or electronic computers. Following is a brief description of some of the more elaborate systems now in use.

GE's Engineering Personnel Register

The General Electric Engineering Personnel Register[2] is a system developed by GE to enable the company to make full use of the education, training, and experience of its engineering and scientific personnel. GE uses both IBM and Sperry-Rand EDP equipment, but for its Engineering Personnel Register it uses the IBM 101 statistical sorter. Each employee to be listed

[2] Additional information on GE's Engineering Personnel Register may be obtained from Mr. George Hupman, Mgr. Personnel Register and Placement, Engineering Personnel Service, General Electric Company, 570 Lexington Ave., New York 22, N. Y.

on the register is asked to fill out a résumé containing descriptive and historical data as well as a list of "experience areas" which is standard throughout the company. This information is coded and placed in the memory section of a computer which retains a list of available personnel.

When a manager has a position to fill, he considers the work to be done, the experience desired, and the previous incumbents, if any. He then submits a request to the Engineering Personnel Register, whereupon the machine scans the list of candidates and chooses the ones best qualified. The list of candidates is then returned to the manager, who studies their qualifications and decides which one will most effectively satisfy his requirements. It should be noted that the machine does not make a specific selection, but rather chooses a list of likely candidates who have the qualifications desired.

GE has also developed similar registers for its manufacturing, sales, and industrial relations personnel. Thus it can now assess employee performance and potential on a companywide basis, so that a promising employee is no longer stymied by the fact that there is no opportunity for him to advance further in his own department. The registers also provide GE managers themselves with an effective technique for obtaining personnel with the qualifications needed to solve particular problems—regardless of where they may be situated in the company. But probably the chief advantage of the GE system is that it affords employees the opportunity of being selected for jobs commensurate with their interest, experience, and ability.

The Navy's PAMI

One of the most highly developed techniques is the one used by the U. S. Navy's Personnel Accounting Machine Installation (PAMI).[8] A punched card machine installation is maintained at each of the 13 Naval districts. Source documents containing all personnel information are received daily by each district headquarters and status reports and personnel files for each station in the district are up-dated daily. The headquarters master file is maintained on a station basis and is further subclassified by service number. In addition, each district installation is connected with every other district through a complete transceiver system which permits recorded information to be transmitted between two points over telephone wires.

Monthly personnel lists are printed and sent to each station within a district for verification. Thus, when special personnel are required, transfers can be affected through inter- or intradistrict exchanges, thereby minimizing transportation costs as well as maximizing the use of individual training. PAMI also submits periodic reports to the Bureau of Naval Personnel in Washington, D. C., which maintains and up-dates records for all reserve

[8] Additional information on PAMI may be obtained from Cdr. W. P. Willis, Jr., Head, Applications Branch, Manpower Information Div., Dept. of the Navy, Bureau of Naval Personnel, Washington 25, D. C.

and active duty personnel. Upon request, PAMI also compiles and transmits summary information to the central computer system. IBM punched cards are used for this system, but PAMI also uses UNIVAC for other purposes.

The AT&T Attitude Surveys

Since 1950, AT&T has conducted semi-annual attitude surveys[4] throughout its entire system with the ultimate aim of identifying the factors influencing employee attitudes. The questionnaires are administered to all management personnel and to statistically sampled groups of employees. Descriptive data about employees are maintained on Sperry-Rand punched cards. These insure accurate sampling, make it easy to vary the composition of the sample from one survey to the next, and eliminate the work of duplications.

The results are computed on a UNIVAC, at an estimated cost of $300,000 a year for the entire Bell System (750,000 employees). The findings are broken down for each company in the system and for each department within each company, and every unit supervisor receives a compilation of the results.

Among the attitudes measured are: confidence in management, pride in company, job satisfaction, personal satisfaction, financial benefits, financial knowledge, and acceptance of service objectives. These can be broken down by training levels, seniority, sex, or almost any other index desired. AT&T executives say that the results have been extremely helpful in establishing or changing company policies.

The use of automatic data-processing machines for personnel record keeping is by no means confined to the giants. A smaller organization which has had considerable success along these lines is the ITE Circuit Breaker Company. Actually, its record system, which is under the direction of Mr. Edward S. Hamilton,[5] who developed the procedures, codes, and IBM punched card designs, has still only scratched the surface of its ultimate potentialities.

ITE Circuit Breaker Company

In its Philadelphia plant, ITE has about 4,000 employees for whom it maintains a master card file in alphabetical order.

This file is duplicated and maintained according to job classification and company seniority within each job classification. The duplicates contain only selected information relating to seniority. This is printed along the top of the card so that, in the event of a layoff, the file can quickly be sorted to single out the employee with the lowest seniority in a given classification. His card is then transferred to a "layoff" file kept in order of seniori-

[4] Further information about the mechanical details of the AT&T surveys may be obtained from Mr. E. M. Beck, Personnel Mgr., or Mr. Fred A. Lodge, Statistical Supervisor, Bell Telephone of Pennsylvania, 1835 Arch St., Philadelphia 3, Penna.

[5] Supervisor of Personnel Research, ITE Circuit Breaker Company, 19th and Hamilton Sts., Philadelphia, Penna.

ty to facilitate recall when the time comes.

Each card contains the following information:

Name and Address
Sex and Race
Date of Birth
Place of Birth and Citizenship
Education and Military Service
Handicap (if any)
Marital Status
Employee Number
Base Rate
Card Code
Rate Code
Job Code
Grade and Step
Effective Data
Seniority
Date of Separation
Separation Code
Insurance Premium

By using punched cards, ITE can quickly print a plant-wide seniority list or a list by job classification and/or department. In addition, annual reports on seniority, distributions by job classifications, age, sex, department, and so forth can be compiled—information that can prove very useful in collective bargaining or in establishing company policies.

ITE also maintains a punched card attendance file. A card is printed and punched each time an employee is absent or late and then filed by clock number. At the end of the year, these cards are tabulated, various reports are printed, and the record for each employee is placed in his folder. Additional reports under job classification, department, age, sex, and the like can also be prepared from the attendance file, providing information that has often been useful in analyzing the causes of absenteeism and tardiness.

ITE also uses a punched card system for maintaining infirmary and accident records. Mark-sensing (a method of recording data with electrically sensitive pencils) is effectively used here. When it is necessary for an employee to obtain treatment at the infirmary, he receives a blank mark-sense card from his foreman containing his name, clock number, classification, time, date, and other pertinent information. The attending nurse mark-senses the type of injury, location, and cause, and records the treatment and diagnosis on the front of the card in longhand. The cards are then sent to personnel and subsequently to the tabulating section which punches each mark-sensed card automatically, after which they are returned to personnel and filed by month and department. At the end of each month, the cards are returned to the tabulating section where a monthly report is prepared. The cards are then refiled in the personnel department.

Further machine processing of the punched cards provides speedy analysis of the causes of accidents, so that high accident rate jobs or departments, as well as accident-prone employees can quickly be singled out. (Through this means, ITE found out that its office employees have a lower infirmary attendance record than its production workers on incentive pay.)

In addition, ITE uses punched card records for labor market analysis by tabulating the geographic distribution of its employees by postal zone num-

ber. This proved very useful some years ago when the company planned to locate a plant in North Philadelphia, assuming that many of its employees lived in this area and could be transferred with relative ease. The postal zone analysis proved this assumption to be incorrect and the plant was accordingly located elsewhere.

Another application of automatic data processing that has been explored by ITE is its use as an indicator of skill shortages in the organization. The company is now developing a machine load analysis to determine how many man hours of each skill will be required in the future—a project that is expected to uncover important data on recruitment and training needs.

At the present time, ITE is compiling a wage distribution by job description as a service to the Metal Manufacturers' Association, of which it is a member. In the past, these reports were compiled by hand at considerable cost, but ITE's machine processing has significantly reduced the hard work and the cost of the report.

ITE's personnel department has also expressed interest in the possibility of maintaining personnel records in the random access disc storage units. By using these units, the company ultimately hopes to eliminate all hand operations, including the maintenance of insurance records.

SKF Industries,[6] which is currently installing an IBM 650 computer to facilitate the operation of its accounting and inventory control systems, affords another example of the use of automation to solve a specific personnel problem.

[6] Mr. Ralph Palmer, Manager—Organization Development, SKF Industries, Inc., Front St. & Erie Ave., Philadelphia 32, Penna., is in charge of this program.

SKF Industries

The company employs approximately 3,000 people in its Philadelphia plant and, at the present time, seniority records are maintained on 3 x 5 cards in three separate files. A master file, up-dated daily, is maintained in the central office and each of the firm's two plants maintains one-half of the file in the plant personnel office. Seniority is measured by job classification, unit, and length of time with the company. When a layoff is in process, each employee has the opportunity to "bump" two lower or two higher job classifications within his home unit. If he is unsuccessful here, however, he can continue searching down to the lowest classification within his home unit and, if still not successful, he is then placed in a general classification. Until an employee has accumulated 18 months in his new unit, his seniority status remains in his home unit. The problem is even more complicated when mass layoffs or recalls are in process or when an employee is several units removed from his home unit in an 18-month period.

Since there is no statute of limitations on seniority grievances, the maintenance of accurate seniority records is a constant headache to SKF. An error made a few years ago not only resulted in disgruntled union-management relations, but also cost

the company $4,000 in back pay plus grievance and arbitration costs.

Although SKF does not anticipate any actual cost saving through its use of the IBM 650 computer to process its seniority data (the present cost of maintaining three handwritten files is about $10,000 a year in salaries), it expects that the speed and accuracy afforded by an automatic data-processing system will more than compensate for its cost—and will probably eliminate much unnecessary expense in the long run.

Pre-installation Headaches

When a company begins to look into the possibilities of automating its personnel records, it is likely to be appalled by the cumbersome nature of its present system. One company currently doing such a study has discovered that it has 110 varieties of personnel forms and approximately the same number of different types of recorded data! Other common record-keeping faults uncovered in studies by several other companies are:

- ► Outdated or useless records. One company, for example, found it was keeping elaborate "military leave of absence" records because, at one time, an executive had requested this particular report. Updated records have been maintained ever since, though they have never been used.
- ► Duplicate records
- ► Files of necessary data cluttered with micellaneous information.
- ► Elaborate statistics serving little or no practical purpose.
- ► Expensive and cumbersome procedures for servicing reports and information.
- ► Records scattered through various offices, making the compilation of reports expensive, time consuming, and less accurate.

While such faults may be tolerated, perhaps, in traditional record systems, they became much more serious when mechanization is contemplated. In fact, if they are not eliminated or at least minimized, optimum results will be impossible.

Machine systems require logical procedures because miscellaneous and duplicate information can distort the mechanical process by requiring elaborate codes and excessive manipulation of data as it passes through the system. One company has estimated that if all the data its various personnel departments desired were punched on cards, no fewer than 20 cards would be required for each employee! No company should therefore embark on a program of automation without having first done a thorough cleanup job on the records it now maintains.

An additional problem that has been uncovered by computer feasibility studies is presented by the fact that many personnel administrators are unaware of the defects of their present record systems. Moreover, they do not know how to coordinate the information flows within their organizations or what information or records should be put on punched cards or computers. In most cases, too, they have no understanding of automatic data-processing systems. It comes as news to many personnel people, for example, that information that is punched on cards can also be printed along the top of the card, so that it can be read in the ordinary way. (In one company,

employees were found trying to read cards by holding them up to the light and interpreting the punched holes!)

It is unfair, however, to put all the blame for lack of knowledge on the personnel people. To judge from the confusion voiced by tabulating supervisors and feasibility study groups, it is fairly clear that systems and procedures analysts do not understand personnel procedures any better than the personnel people understand automatic data processing. Each side must learn more about the other's problems if the data-processing system is to be successful.

Organizational Problems

The integration of personnel record keeping with tabulating functions may also raise organizational problems. One company whose personnel records are now being processed by the tabulating section has found that the machine time allotted to the work of the personnel department is already insufficient for its needs. In anticipation of further expansion of its operations, the department has been pushing for its own installation. The department argues that not only would its operating budget not have to be increased, but that significant savings in clerical costs would also be achieved. Further, by operating its own system, it would have better control of its operations and the overworked tabulating section would be relieved of an unnecessary burden. But management insists that all automatic data-processing machines be located in a central tabulating department. This question of where actually to place the personnel tabulating unit is likely to crop up in most companies sooner or later, and it is one, of course, that each company must answer in the light of its own particular circumstances.

Principally, this problem arises because the change-over seldom comes as the result of a conscious development. Usually, companies begin maintaining part of these personnel records on punched cards as a by-product of their mechanized payroll procedures. Much of the information used by accounting departments in compiling cost data is of course useful to the personnel department. Thus personnel administrators begin asking the payroll section for special reports. The pattern that evolved in one company is probably typical. Here the payroll department, after a series of requests for personnel reports, finally suggested that the personnel department set up a regular reporting schedule. Now the payroll department regularly runs off statistical reports for personnel at the same time as payrolls are compiled. While such an arrangement may serve to bridge the gap between the personnel and tabulating functions for the time being, what usually happens is that the personnel department finds the tabulated information more and more useful, and its demands on the tabulating section become prohibitive. Eventually, a subunit is set up in the tabulating section to handle data processing. While this may be the best solution for the small company whose personnel department cannot absorb the cost of a separate tabulating unit, the per-

sonnel requirements of large firms may impose too great a burden on the tabulating system. In such cases, a unit actually located in the personnel department itself will probably be a more feasible arrangement.

Large corporations are only just beginning to explore the possibilities of integrating their personnel record-keeping activities with their data-processing systems. The personnel departments of du Pont and AT&T, for example, have initiated feasibility studies along these lines, and though their findings are not yet available it may be assumed that as programs are developed and refined, other companies will follow suit.

In any event, personnel administrators will in the future have to be conversant with the basic concepts of data processing, for, if they are not, they are likely to find that many of the functions in which they now take such pride have passed to the control of the payroll people or some other mechanized unit. Record clerks will have to be trained in data processing so that they can prepare machine procedures and thus facilitate communications between personnel departments and tabulating units. (Of course, requests for information and/or the coordination of processes within the personnel department will always remain the responsibility of the personnel administrator.)

Though it is difficult to say whether mechanical records systems actually effect any savings in operating costs, in most cases, the value of the increased information appears to offset any increase involved. This, at all events, seems to be the consensus of companies that have already made some progress along the road to automating their personnel records—though each personnel administrator contemplating the installation of an automatic data-processing unit must, of course, make this value judgment for himself.

Working Couples

THE PERCENTAGE of married couples with both husband and wife working has been on the increase since the end of World War II, reflecting the steady uptrend in labor-force participation of married women whose children have reached school age. This rise in the number of working couples reached a record of 10.8 million in the spring of 1957—28 per cent of the estimated 38.9 million married couples in the nation—according to the U. S. Bureau of Census.

In contrast with this figure, the proportion of families with both husband and wife in the labor force at the end of World War II was only about 20 per cent. Even in 1957, however, the large majority of married couples (24.4 million or 63 per cent) stuck to the traditional pattern whereby the husband acts as breadwinner and his wife stays home to keep house.

A step-by-step guide for the organization that wants to know how to arrive at an over-all assessment of the talents and skills at its disposal.

How to Conduct a Manpower Audit

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WHY is it that so few companies take the trouble to make a comprehensive inventory of the performance and potential of their managerial and professional personnel—the people who contribute so significantly to the success of the enterprise? Whether it be from lack of time or from lack of know-how, the failure to take stock of such important, though intangible, assets must be accounted a serious omission in any systematic personnel program.

It is the aim of this article to describe a systematic approach to assessing or auditing a company's talent and to applying the results to improve operations. Since the emphasis throughout will be on the "how" rather than the "why" of such a program,[1] on the latter score perhaps no more need be said here than that, if the company is to make more effective use of its manpower resources (and what company can claim to be beyond improvement in this respect?) it must first know what resources it has. This is where the personnel audit proves its worth, by providing a systematic review of each employee's past and present performance and an assessment of what he is likely to do in the future. It goes without saying, of course, that these facts must be recorded in a consistent and uniform manner that can be easily understood and, where a large number of employees are involved, readily lends itself to group analysis.

The program described here was begun early in 1957 under the direction of Marion S. Kellogg, Manager of Employee Relations at GE's Flight Propulsion Laboratory Department. Be-

[1] For a more extensive discussion of this aspect of the subject, see I. Ingenohl, "Taking Stock of the Company's Psychological Assets," PERSONNEL, May/June, 1958, p. 28.

fore the full audit of 870 technical, scientific, managerial, administrative, and other professional personnel, embracing the whole range of the Department's functions—engineering, manufacturing, marketing, employee relations, and finance—was undertaken, there was an intensive pilot run on the first 20 cases. This initial experience yielded a number of refinements that were dully incorporated in the technique described below.

The Basic Data

A team of three people was trained to conduct the audit. During the pilot run, the team worked together, checking and double-checking to insure consistent practices, standards, details of format, and so on. Thereafter, each of the three auditors worked on a separate group of employees until all the individual audit documents were completed. Once their learning stage was over, the auditors were able to complete close to eight cases a day, or about one an hour, using mechanical recording equipment and later transcription by a pool of typists.

The initial objective was to gather all pertinent i.formation for evaluation. Much of the raw material was already available in a central set of personnel files, but steps had to be taken to have complete test batteries available on all employees, to have up-to-date accomplishment reports prepared, and to round up useful but as yet unfiled papers on the highly mobile population being audited. When assembled and delivered to the auditor, the data available on a man typically included:

Training and experience. The auditor had access to basic personal history data in all pertinent areas: formal education, job assignments, on-the-job training, participation in professional societies and community activities, honors and awards, etc., as well as salary and formal job progress.

Performance appraisals. This at best was a series of periodic appraisals on the positions the man had held throughout his GE career. These usually, and especially for the last five years, contained information on how —and how well—he had performed the key responsibilities of his positions rather than a simple description of his traits.[2]

Personnel test scores. The results of several tests regularly used by the Department were generally available. Among them were tests of numerical and verbal skills, general mental ability, and social understanding and sensitivity. In addition, for engineering personnel, there were tests of spatial visualization, mechanical comprehension, and competence in solving engineering analogies.

Interview reports. For most of the audited employees in managerial positions there were also reports on "depth" interviews conducted with them by trained interviewers. Each such report provided a comprehensive

[2] For details of this appraisal program, see M. S. Kellogg, "Appraising the Performance of Management Personnel: A Case Study," PERSONNEL, March, 1955 and C. E. Gray, "Appraising Professional Personnel: One Company's Experience," PERSONNEL, March, 1957, p. 442.

analysis of the man's strengths as well as of those characteristics that could or should be improved—a qualitative supplement, as it were, to the quantitative test data.

Personal accomplishment reports. Each man included in the audit was asked to list the significant achievements of his career, followed by details of the three he considered most important. He was also asked which job experiences had best prepared him for his current job and what work he would like to be doing two or three years hence. This report furnished some useful facts as well as insight into the man's own work standards, breadth of perspective, and goals.

Miscellaneous data. Most of the folders also included other miscellaneous information, such as pre-employment reference checks, special commendations, work-connected problems, and so forth. These data were also helpful, of course, in giving a full picture of the employee's past performance, from which predictions as to what he was likely to do in the future might be made.

Components of the Audit

When fully assembled, the individual folders provided the basis for compiling three sets of data:

1. An individual audit for each employee.
2. Organization charts for each work group, color coded to indicate suggested action.
3. Tables of numerical ratings on 12 characteristics.

The individual audit. This document consisted of either five or six sections. The first (see Exhibit 1) was a summary of the basic facts of the employee's training and experience, together with some inferences keyed to the Department's business, e.g., familiarity with the airframe side of the aircraft business. The second section (Exhibit 2) summarized the findings of his past performance appraisals in chronological order. This historical review brought out the persistent characteristics of the man and his work, both good and not so good, as well as any changes for better or worse which appeared to have taken place. The third section (Exhibit 3) gave a rundown of the employee's test scores, while the fourth was an outline of depth interview findings, where available. All the above sections followed the same form—a balance sheet of assets and liabilities. In general, the assets column consisted of those strengths which could be counted upon to make a positive contribution to the man's job performance or future growth—the factors that could and should be exploited and built upon. On the liabilities side were placed the less favorable features which could be improved, along with those weaknesses which, since they probably could not be remedied, should not be emphasized in job assignments.

The salient features from these four sections were then integrated into a narrative summary (Exhibit 4) offering an evaluation of the employee's present job placement and indicating the appropriate steps to be taken to insure his further growth and how far

FPLD MANPOWER PLANNING AUDIT

NAME _____ COMPONENT _____

JOB TITLE Engineer AGE 34 YRS. CO. EXPERIENCE 3

TRAINING AND EXPERIENCE

Assets	*Liabilities*
MSME degree from Lehigh University.	Lacks experience in any one phase of engineering.
BSME from Duke University.	Experience limited to engineering function.
Electronics course at University of Tennessee.	Lacks technical depth in his career.
USAF Guided Missiles extension course.	No evidence of continuing professional growth through outside activities.
Over 12½ years varied work experience.	Lacks leadership or supervisory experience.
Three years experience mechanical design of research compressors and related test apparatus.	Lacks record of substantial achievement during career.
Two years experience as a facilities project officer.	Has not advanced as rapidly as desirable for top level assignment ultimately.
Three years experience as fire insurance inspection engineer.	
Three years experience in military aircraft engineering.	
Experience in various phases of engineering.	
Experience in both Government and commercial business.	
Several excellent contributions as an individual.	

EXHIBIT 1

Individual Audit—Section 1

RATINGS

YEAR—June, 1955

JOB—Engineer

Assets	*Liabilities*
Over-all evaluation—exceeds normal requirements.	Does not give dynamic first impression.
Systematic, analytical ability.	Leadership ability not evident at first.
Highly dependable.	Needs additional experience with Company product lines.
Is sincere and thorough.	
Loyal to Company.	
Basic leadership ability.	
Has shown excellent judgment in evaluation of personnel.	
Ability to develop subordinates in technical aspects.	
Very conscious of budgets and schedules.	

YEAR—December, 1955

JOB—Engineer

Assets	*Liabilities*
Over-all evaluation—exceeds normal requirements.	Too conservative.
True sincerity.	Does not always appear to be aggressive.
High technical ability.	Needs more actual design experience to round out his analytical abilities.
Alert mind.	
Industrious.	
Well liked by fellow workers.	
Has shown good ability in interviewing engineering applicants.	
Can readily train junior engineers.	
Has established his standing as a qualified design engineer.	
Other designers now seek his assistance and technical guidance.	

EXHIBIT 2

Individual Audit—Section 2

TEST RESULTS

Assets	*Liabilities*
General Mental Ability—well above average—superior to 72% of executive applicants.	Spatial Visualization—average—superior to 40% of fifth year engineering students.
Verbal Ability—well above average—superior to 73% of executive applicants.	
Numerical Ability—above average—superior to 67% of executive applicants.	
Mechanical Comprehension — superior — Bennett Test—superior to 70% of college graduate engineers.	
M.E.A.T.—superior to 88% of engineers with a Bachelor's degree who have been out of school from six to twenty years. (Received MSME in 1948)	
Social Intelligence—well above average—superior to 73% of college freshmen and sophomores.	

EXHIBIT 3

Individual Audit—Section 3

FPLD MANPOWER PLANNING AUDIT

NAME _____ **COMPONENT** _____

JOB TITLE Engineer **AGE** 34 **YRS. CO. EXPERIENCE** 3

SUMMARY

Although it took Joe quite a few years to get started towards a productive engineering career, he has made good progress in the last few years. Although his basic abilities are only slightly above average when related to our test norms, he uses them effectively. He has an excellent command of engineering fundamentals, possesses a strong analytical ability, and is practically oriented. These assets, coupled with his good leadership and managerial skills, make him an excellent prospect for supervisory work, especially in a mechanical design activity on an engine project. Since his experience has been limited to compressor design problems, it would be most appropriate that his first supervisory assignment be on that component of an engine, but he should not be limited to that in the future. He has at least average potential for ultimate position as a manager of mechanical design for an engine project. To be fully successful as a manager, Joe needs to become somewhat more aggressive and forceful in his dealings with others. However, this does not appear to be a serious handicap with him and he is ready now to assume supervisory responsibilities. An appropriate area for this would be in _____ *Operation.*

EXHIBIT 4

Individual Audit—Narrative Summary

and in what direction he could be expected to develop. The final section (Exhibit 5) presented the major findings of the audit in a form that the supervisor could discuss with the employee, for information purposes, as well as to stimulate him to take action for his further development. Several copies were prepared of each individual audit. One went to the man's supervisor and the rest on a need-to-know basis to personnel responsible for various employee relations programs.

The organization charts. Organization charts were then drawn up for each work group and color coded to provide a picture of the group's strength at a glance. The kind of data included in the charts may be seen from the sample chart shown in Exhibit 6.

The numerical ratings. Finally, each employee was rated, on a five-point scale, on 12 competence-related variables. (For some variables, detailed definitions of the intervals on the scale were worked out.) Mainly these ratings were used as a check on the consistent application of standards when the audit team, working as a group, came to carry out the final review. The 12 variables used in the ratings were:

1. General level of mental abilities.
2. Use of mental abilities.
3. Depth and range of experience in the function.
4. Social skills.
5. Drive.
6. Natural leadership qualities.
7. Managerial skills for next high level job.
8. Probable highest level to be reached in GE.
9. Probable best performance to be reached on present job.
10. Promotability as a manager.
11. Promotability as a specialist.
12. Creativity.

After the paper work had been completed, the next stop was to present and discuss the results with the Department's managers, with an explanation of the procedures and frame of reference that had been used.

Managerial Action

Managers were encouraged to—and did—speak out loudly and clearly if their judgment of an employee was at variance with the findings set forth in his report. In about 85 per cent of the cases, however, the managers were in essential agreement with the conclusions—a good batting average, considering that the audit standards erred on the tough side and the inferences had been drawn solely from written records. It was to be expected that a manager's firsthand impression of his subordinates would occasionally diverge from the picture presented in such records, which was inevitably affected by such factors as delay in getting new material into files, oversights, or poor documenting of critical incidents or observations.

Managers were also urged to study each individual audit in terms of the employee's performance on his present job and to help him identify the steps that would enable him to make a more valuable contribution to the business. As a rule, it was suggested that a plan for improving the employee's perform-

SUMMARY OF ASSETS AND LIABILITIES

Assets	*Liabilities*
Good basic abilities. General mental ability well above average. Verbal ability well above average. Numerical ability above average. Mechanical comprehension superior. Spatial Visualization average. Social intelligence well above average. Good analytical ability. Alert. Careful. Thorough.	**Needs to display more aggressiveness and forcefulness in dealing with others.** **Should not be too shy or conservative.**
Varied technical background. MSME and BSME degrees. Special university courses. Special G. E. courses. Compressor development experience. Facilities development experience. Engineering inspection experience. Aircraft engineering experience. Vendor and shop liaison experience.	**Needs to acquire broader experience.** Design of engine compressors. Design of other engine components. Over-all engine design experience.
Good leadership capabilities. Ability to evaluate others. Ability to train others. Well liked by fellow workers. Respected as a qualified design engineer. Understanding of need for clear schedules and objectives. Cost consciousness. Practical orientation. Display of good judgment. Natural administrative ability. Loyalty.	**Needs to continue professional growth through more active participation in outside activities.** Professional societies. Preparing papers and articles. Continued advanced course work needed. **Managerial skill training program.** Desirability to include interview and appraisal training.

EXHIBIT 5

Individual Audit—Concluding Section

FLIGHT PROPULSION LABORATORY DEPARTMENT
ORGANIZATION ANALYSIS - 1957 MANPOWER AUDIT

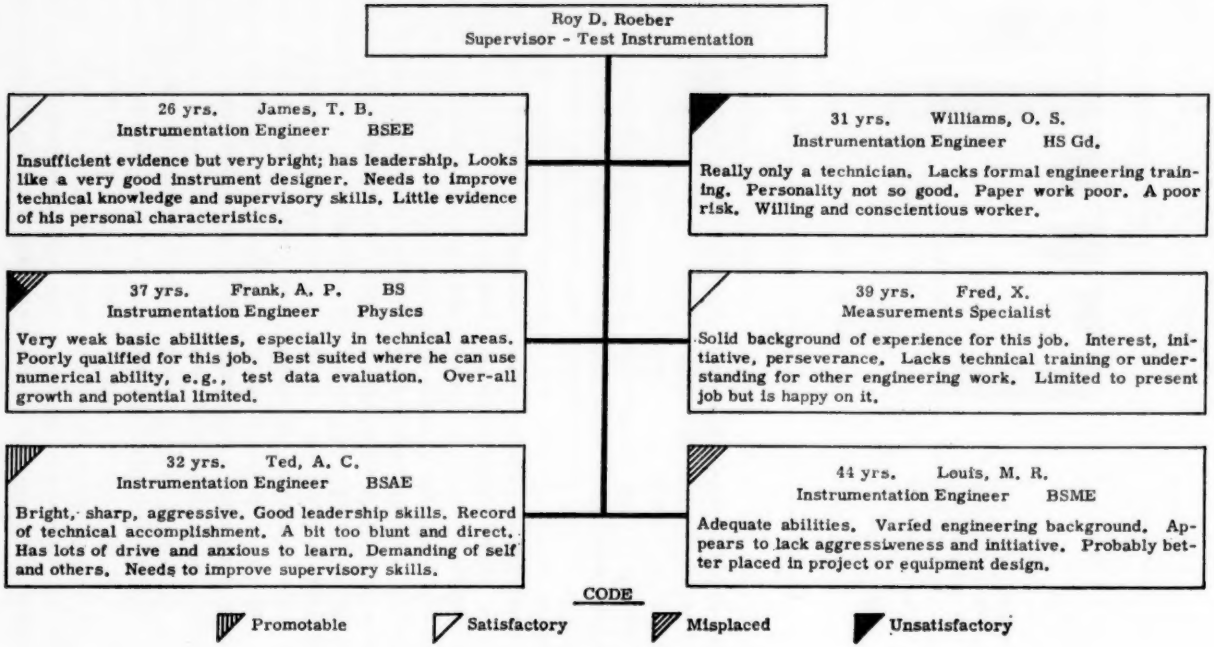
Roy D. Roeber
Supervisor - Test Instrumentation
26 yrs. James, T. B.
Instrumentation Engineer BSEE
Insufficient evidence but very bright; has leadership. Looks like a very good instrument designer. Needs to improve technical knowledge and supervisory skills. Little evidence of his personal characteristics.
31 yrs. Williams, O. S.
Instrumentation Engineer HS Gd.
Really only a technician. Lacks formal engineering training. Personality not so good. Paper work poor. A poor risk. Willing and conscientious worker.
37 yrs. Frank, A. P. BS
Instrumentation Engineer Physics
Very weak basic abilities, especially in technical areas. Poorly qualified for this job. Best suited where he can use numerical ability, e.g., test data evaluation. Over-all growth and potential limited.
39 yrs. Fred, X.
Measurements Specialist
Solid background of experience for this job. Interest, initiative, perseverance. Lacks technical training or understanding for other engineering work. Limited to present job but is happy on it.
32 yrs. Ted, A. C.
Instrumentation Engineer BSAE
Bright, sharp, aggressive. Good leadership skills. Record of technical accomplishment. A bit too blunt and direct. Has lots of drive and anxious to learn. Demanding of self and others. Needs to improve supervisory skills.
44 yrs. Louis, M. R.
Instrumentation Engineer BSME
Adequate abilities. Varied engineering background. Appears to lack aggressiveness and initiative. Probably better placed in project or equipment design.
CODE
Promotable
Satisfactory
Misplaced
Unsatisfactory

EXHIBIT 6

Group Organization Chart

ance should be developed at his next performance appraisal, unless this was far off. In such cases, the manager was advised to undertake this performance improvement planning in one of his periodic, informal coaching or counseling sessions.

The group audits provided both the basis of and stimulus for a thoughtful review by the manager of the depth and range of talent within his organization. One effect of these group charts was to highlight the many cases at the upper end of the performance scale, where good potential merited careful attention and aid in development, whether in the form of formal courses or tougher work assignments. By the same token, the poor or marginal performers were also singled out.

This spotlight on misplaced, questionable, or downright unsatisfactory employees was especially beneficial because the typical manager, no matter how well intentioned, is usually reluctant to get rid of poor performers unless he is prodded by some external influence. It is seldom that, of his own accord, he makes a thorough scrutiny of the results achieved by his group and the people who are contributing to those results. Thanks to the audit, managers more often identified the areas where individuals were not performing well, discussed them with the employees concerned, and afforded them a reasonable opportunity to improve. Those failing to change significantly were then either terminated, or transferred to more suitable work. In general, therefore, this procedure tended to focus attention on cases where remedial action was needed and, in many instances, long overdue.

An over-all picture of the audit findings, as of April 1, 1957, is shown in Figure 1. In the two years that have elapsed since then, many changes have taken place. Some of these are directly attributable to the audit; others would doubtless have occurred anyway. With such a highly and upwardly mobile

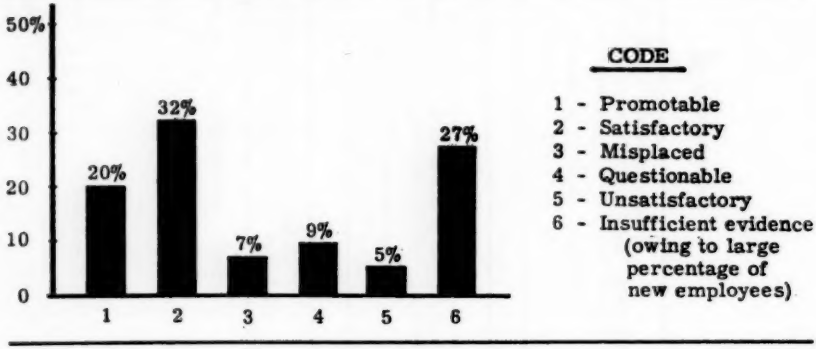

FIGURE 1
The Over-all Findings

population, it is difficult to identify which action was due to which cause, but accumulated observations suggest that the visual chart presentations combined with the readily accessible, digest form in which its individual audits were presented led to substantially more action on unsatisfactory, questionable, or misplaced performers than might have otherwise occurred. Whatever the reasons, 86 per cent of the employees who were considered misplaced and 93 per cent of those regarded as unsatisfactory have since been moved from their positions. Unfortunately, the effect of the audit on the handling of the rapidly growing top strata talent cannot as yet be clearly determined.

In conclusion it must be said that it is by no means the intention of this article to suggest that an auditing program of the kind described here is the panacea for all personnel ills. Rather, it represents only one of a whole kit of tools needed in a comprehensive personnel management program. No audit can be better than the competence of the people conducting it, and the documents in themselves constitute no magic wand—results can only be achieved through diligent follow-up by the managers concerned. Nevertheless, the audit can provide a useful adjunct to a program incorporating such features as a sound appraisal plan based on job responsibilities and demanding standards, an enlightened compensation policy, recognition of the factors affecting a man's ability and willingness to work,[8] and extensive training in managerial skills. Viewed in this perspective, the manpower inventory or audit adds yet another tool for making better use of the company's human resources. Such, at any rate, has been our experience.

[8] D. R. Lester, "Managing Professional Personnel: A Successful Plan," *Business Horizons*, Fall, 1958, pp. 51-57.

The Industrial Relations Executive: A Profile

ON THE BASIS OF 500 returns selected from more than 1300 respondents, a recent survey covered in *The Industrial Relations Executive: 1958-1959*, draws the follow- picture of the typical industrial relations executive:

He is 41.5 years of age.
He holds a college degree.
He is married and has two children.
He owns his own home.
He is active in the community.
He works 51 hours a week.
He makes a salary of $10,041 per year.
He belongs to two or more professional societies and attends 8.6 meetings yearly.
He likes working with people.
He dislikes doing detailed paper work, performing clerical duties, and writing reports.

An incentive system that isn't clearly spelled out in the labor contract means trouble ahead for all concerned. Here are some sample clauses that should help to make this section of the agreement reasonably foolproof.

Incentive Clauses: The Costly Clinkers

IRVING A. DELLOFF

Director of Industrial Engineering
Presto Lock Company
Garfield, N. J.

"THAT DAMNED INCENTIVE system will drive me to an early grave!" Who has not heard this familiar lament—and why does it so often issue from the very man who sloughed off the company's incentive plan in a couple of paragraphs in the collective bargaining agreement?

It's understandable, of course, that after a protracted struggle over wages and fringes, management negotiators should be only too anxious to get the rest of the bargaining over and done with. At such a time, providing for the proper administration of the incentive plan may seem to be a somewhat minor matter. Actually, however, neglect of this highly complicated section of the agreement can often prove more costly than the proposed wage increase which management spent all its efforts trying to fight off.

It's too often forgotten that once union negotiators have an agreement on wages and fringes they will backtrack to every point that management has passed over and again press for its acceptance. If management gives way at this point it can find itself saddled with an incentive section that is full of costly clinkers. This article will discuss some of the most potent sources of trouble in this area and recommend ways of eliminating them.

These trouble spots fall into the six following categories:

Quality
Discipline for low productivity
Changes in standards
Guaranteed average earnings
Negotiation and verification of standards
Arbitration

NOTE. This article has been adapted from a paper delivered at AMA's Midwinter Personnel Conference.

Let's take a closer look at the problems they pose.

Quality

Many companies have been deterred from embarking on an incentive program in the belief that, once workers are on incentive, the quality of the product is bound to suffer. It is true that some companies have had this unfortunate experience. But if the contract is properly worded and properly administered there is no reason at all for quality to suffer.

Most contracts state simply, "Incentive will be paid for acceptable quality only." While this may sound good, it is too vague to stand up under practical conditions. To be effectively operative, the provision must be spelled out in detail:

> The guiding principle in paying for production on incentive will be that a bonus will be paid for production of acceptable quality only. The company shall be the sole judge of what constitutes acceptable quality. The employee will not be penalized where work is rejected through no fault of his own. If, however, an employee produces work of substandard quality he will be required to repair or rework the substandard work at the discretion of his supervisor. Moreover, work of substandard quality will be deducted from the total amount produced by that employee and incentive will be calculated for good work only. At no time shall an employee receive less than his base rate.

This clause places the responsibility for turning out work of acceptable quality fairly and squarely on the employee. Moreover, the fact that he loses the opportunity to earn bonus pay during the time he spends repairing or reworking the job is a strong inducement for him to do it right the first time.

Discipline for Low Productivity

Many contracts contain a clause which gives the employer the "right" to maintain efficiency in his operation, but, here again, unless this "right" is clearly defined it is merely a vague prerogative with little or no hope of realization. Here are two effective clauses covering this point:

> It is agreed and understood that after a training period of 112 hours an employee shall reach 90 per cent of standard. Should an employee fail to reach 90 per cent of standard he or she shall be laid off. Moreover, should an employee fail to maintain an average of 90 per cent standard he or she shall be laid off.

> The company shall have the right, without interference from the union, to discipline employees whose productivity is consistently below standard. An operator who is consistently below standard shall be defined as an operator whose average weekly productivity falls below standard for any two weeks in a month.

It will probably be asked, "Will the union buy such clauses?" In my experience, yes—the union will agree to any clause that is supported by facts, logical arguments, and by examples of similar clauses in other contracts.

In passing, it may be pointed out that the company need not accept low productivity when the shop is on day work either. Low producers can be disciplined even if standards based on time studies do not even exist. Unless the contract specifically prohibits the

company from doing so, it can set its own standards in its own way, provided it can prove that they are fair and reasonable.

Thus, in one case, an employee was discharged for producing only 42 per cent of the output of other employees doing comparable work and the company's action was upheld. And in another case, the arbitrator ruled, "The right to manage the plant and direct the workforce would be almost meaningless if the company could not judge efficiency and require a reasonable level to be maintained."

In general, arbitrators have held that, as long as no discrimination is involved, employers have the right to formulate criteria for judging employee performance and to discipline for failure to come up to the stated levels.

Changes in Standards

Another bugaboo in the incentive section of the contract arises from the fact that methods have a way of changing and unless the contract expressly states what is involved in a methods change it may be very difficult to enforce a standard that has been revised to reflect the change.

Many contracts contain the innocent-looking phrase, "Only the element changed will be recalculated." The pitfall here is that the time value for each element is based on a series of basic motions called therbligs and the position of the operator's body at the start or conclusion of each element necessarily affects the time value of the preceding or succeeding element. Therefore, even if the changed standard is limited to the change in only one element, it may still play havoc with other elements—not to mention the standard data. Suppose, for example, that the end point of a certain element is "dispose." The method is changed and the end point now becomes "position." Consequently, less or more travel time for the operator's hands may be needed for the succeeding element. Thus the change has affected not one element but two. To avoid a clinker in the contract, the following clause is suggested:

> Standards of production will not be changed unless there has been a change in the methods, materials, equipment, feeds, speeds, quality requirements, or any other conditions under which the original standard was established. Only the element that is changed, *and other elements that may have been affected*, will be recalculated. Standards may also be changed when clerical errors in computation are found.

Such a clause is not only specific, but also allows for any unforeseen consequences that may result.

Guaranteed Average Earnings

The union argument that once a company establishes an incentive plan it must guarantee the operator an incentive opportunity on every job is another source of trouble. Since it cannot be denied that there may be conditions beyond management's control which will make this impossible, the union may prescribe "guaranteed average earnings" as the cure. Reason-

able though this may sound, the cure is often worse than the disease.

Even in well-managed plants, an operator's incentive earnings are sometimes affected by his having to wait for supplies, assignments, or repairs, or because material varies from specifications, or for other causes outside the normal run of operations. It is true that while the operator is experiencing these difficulties he is being deprived of the opportunity to earn incentive. But the company also gets either no productivity for the time the operator is waiting or productivity below standard during the time he is working on parts that are out of specification, yet it still pays the base rate.

Were the company to pay average earnings for these conditions, this would add so substantially to the unit cost as to offset any benefits the incentive system may have. Further, when average earnings are guaranteed, the workers tend to pay more attention to maintaining these earnings than to their performance on the job. Consequently, abuses creep in, such as claims for average earnings for operators who have been transferred, claims for average earnings because, "The parts I am working on are not up to standard quality," and similar dodges.

Since an incentive system is established for the sole purpose of inducing operators to work harder so as to increase their productivity and hence reduce costs, paying bonuses where no superior production has been achieved, aside from being undesirable in a practical sense, merely undermines the stimulus to additional effort. To prevent the rot setting in, the following clause is suggested:

> All work done on jobs which:
> (a) Are developmental or experimental in nature,
> (b) Do not as yet have a standard set for them,
> (c) Are performed under conditions which differ from the conditions under which the original standard was set,
> shall be paid for at the base rate only.

This provision prevents the worker from taking unfair advantage of the incentive system and thus protects the company from many of the abuses that could result from it.

Negotiation and Verification of Standards

In every well-established system of standard data each element of each cycle of a particular operation must be related to every other element of every other cycle of every other operation in the plant. Standards of production, therefore, cannot and should not be "negotiated" in the usual bargaining sense. There should be no such thing as a "loose standard" or a "tight standard." If properly set up, all standards should be consistent, and any standard that is "loose" or "tight" is so only because of an error on the part of the industrial engineering department.

Setting standards properly takes time. To arrive at a well-established and tested system of consistent standard data, each basic element must be analyzed and compared with every

other element. The union should not be allowed to pressure the company into setting standards quickly. It is much better for the company to operate without any set standards at all until it is sure of its data, than to do a "quick and dirty" job that will come back to haunt its authors. Generally, it is the standards that are set in a hurry that prompt the union to want to "negotiate" them.

But does the union actually have a right to "negotiate" standards? Many arbitrators have ruled that, unless specifically prohibited in the contract, standards of production *are* subject to the grievance procedure and hence to arbitration. Moreover, the NLRB's decision, which was upheld by the U. S. District Court of Appeals, states that the union has a right to examine the company's time study data. However, not all unions insist on bargaining over standards. In the September, 1957, AFL-CIO *Collective Bargaining Report,* Mr. Gottlieb, the AFL-CIO research department's industrial engineer, pointed out that time study disputes remain primarily a local union problem. Locals, he went on to say, approach it in one of four general ways:

1. Some locals prohibit the use of time study altogether.
2. Some locals allow management to use any method of setting standards it desires, but keep the right to bargain on results.
3. Some locals participate with management in setting standards.
4. The majority of locals allow management to make time studies but insist on bargaining on both the methods used and their application.

In any event, whatever approach the local may adopt, the administration of job standards under an incentive plan requires acumen a-plenty—of the more than 4,000 grievance cases before the American Arbitration Association last year, over 23 per cent were caused by disputes over job standards.

Personally, I believe that the least number of headaches are encountered when management sets the standards and permits the union to question them, with the right to grieve. Under this method, the union may designate an observer for the purpose of investigating time study grievances as they arise. This observer should be an employee of the company and should be trained by management in work simplification and time study, as well as being well schooled in the methods used by the company in arriving at its standard data. In addition, the company would do well to suggest to the union that this observer be a non-elected appointee and that he be kept clear of intra-union politics. If these suggestions are followed and if the observer is an intelligent man who is properly trained, the union members will have the assurance that their interests are being properly safeguarded—a fact that in itself should serve to reduce the number of grievances.

It may also be a good idea to have a clause in the contract enabling any production worker to request a review of any standard that he feels is incorrect, provided that the person making the request has worked on the

job long enough to test the standard fairly. Of course, the minute this procedure is instituted, the company will be deluged with requests for reviews. However, if each one is processed honestly, the requests will soon diminish. In essence, what the company is actually doing here is establishing the principle that its standards are fair and open to scrutiny and that errors will be rectified on recognition. If the door to protests is shut, hordes of employees will soon be trying to break it down with imagined grievances—but as soon as they know that the door is open and that they may petition for redress, they will be less anxious to exercise the right.

The Arbitration Clause

Nevertheless, despite these admirable principles, situations still have a way of getting out of hand and some disagreements must still be referred to an arbitrator for settlement. Thus as the final, logical step in the contract's clause on grievances, the type of arbitrator must be provided for. Further, to insure a brake on his decision-making powers, he must be limited to the points at issue. Two simple steps are implied here:

(1) Make sure the contract specifies that, in the event of a dispute over a standard or, for that matter, over any interpretation of the standard or incentive clauses in the contract, the matter be submitted, as the final step in the grievance procedure, to a qualified industrial engineer for arbitration. (In this way, economics professors and "Madison Avenue lawyers" are eliminated from consideration.)

(2) Limit the arbitrator's decision to the standard in dispute and specify that, once a decision is reached, neither party will reopen the dispute for the life of the contract.

This last provision is especially important because some arbitrators feel that they are called upon to interpret the entire agreement, despite a request from both labor and management that they rule on the issue in dispute only. Therefore, unless the contract expressly limits the arbitrator, he may—innocently enough—open old wounds or pave the way for new ones. In the case of standards of production, for example, it is essential that the arbitrator's decision be limited to the one in dispute; then, should the decision be in the union's favor, the company has only one standard to revise. Picture the havoc that could be wrought on a company's standard data should an arbitrator decide not only that the disputed standard is incorrect, but also that the basic data involved in its creation are not in line with his particular philosophy!

As we learn more about standards and incentives and their impact on workers, I think we shall find that management's chances of securing the union's acceptance of the clauses discussed here are strongly influenced by the pattern of human relations into which they are introduced. Money is not always the answer to the problem of worker motivation. When an incentive system is not working

well, management, holding itself blameless, all too often tends to look elsewhere for the reasons for its failure and justifies its inaction or policies on the nearest scapegoat—the union.

But personnel people and industrial engineers would do better perhaps to start by analyzing their workers' reactions to the incentive plan or to any other management policy on which they embark. They will find that the answers to their problems are no further away than their own shop floor.

Communication Breakdowns on the Executive Level

DEPARTMENT HEADS and their immediate subordinates—section heads—are likely to disagree on almost all aspects of the subordinate's job, according to the preliminary findings of a University of Michigan study now under way. Interviews of 35 executives in each of these two groups from several mid-western oil, manufacturing, and utility companies showed that in only 6 per cent of the cases did the higher executive and his subordinate agree about the subordinate's problems. In most instances, the department head had almost no conception of the section head's job problems, and also had great difficulty in understanding them. There was more conformity, however, when it came to job duties, the two sets of executives being in high agreement on this point in 40 per cent of the cases studied.

Main cause of the disagreement the study indicates is the subordinate's fear of losing out on advancement. This leads him to adopt a "yes man" attitude in discussions with his superior and to tell him only about his achievements, omitting all mention of the problems involved. Thus, the superior sees only the favorable side of his subordinate's job performance and consequently does not understand his difficulties. As an example of this failure in communication, the researchers cite the case of a superior who thought that his subordinate's problems centered on cost control and budgeting, whereas the subordinate felt that his problem was getting action from his superiors.

Tentative findings from another portion of the study showed that the executive and the subordinate also differed widely concerning future changes in the subordinate's job. In one case where the subordinate was not anticipating any changes in the section, his superior had plans for adding automation.

Though the more up-and-coming managers would seem to be the likeliest bets for a management development course, here's some evidence that it's often the least promising ones who respond to training best.

Management Development Training: Who Profits Most?

HERBERT E. KRUGMAN

Richardson, Bellows, Henry & Company, Inc.

Is MANAGEMENT development mainly a process whereby "the rich get richer and the poor get poorer?" Many training men would say, "Yes," on the assumption that the "best" managers, by virtue of their very ability, must also be the "best" students. In practice, however, it usually turns out that the "best" managers are already so sophisticated that the program has to be spiced with information on world affairs and other material not necessarily related to the job, simply to give the trainees something new and stimulating to think about.

Aside from the question whether broad programs of this kind really make for better performance on the job, we may well ask whether it is not really the "underdog" managers—those who have been *deprived,* for some reason or other, of learning what their more versatile colleagues already know—who derive the greatest benefit from management training courses. Unfortunately, owing to the sparsity of systematic evaluations of management development programs, it is difficult to marshal concrete evidence on this point. Nevertheless, the three evaluation studies whose findings are summarized below strongly indicate that what we might call *deprivation* is an important factor in determining what kind of manager gets the most out of a management training course.

Perhaps the most common form of deprivation is revealed by a unique experiment in management development conducted at the Calco plant of the American Cyanamid Company about 10 years ago. Known as the "Calco Round-Table Program," it began with a discussion group of 14 members meeting weekly for 30 weeks

at a location away from the plant. An outside consultant served as chairman. The program was unique in that the 14 members were composed of two managers from each of the seven levels within the company, down to and including first-line supervisors.

Deprivation Through Age

During the program, the group was asked to rate from time to time those members it considered "least likely to change." After the course, ratings were collected on who had actually "changed the most."

Surprisingly enough, both group and individual measures of change revealed that those members who had initially been judged "least likely to change" were, in fact, the ones who showed the most change!

On further analysis, however, the reason is not, perhaps, so surprising after all. As it happened, the managers who had been rated "least likely to change" were the "old-timers" with "old-fashioned" ideas. Indeed, they had been included in the group at the outset almost as an act of condescension—as though it were a foregone conclusion that "you can't teach an old dog new tricks." Actually, the reason these old-timers turned out to be the members of the group who were most stimulated by the program was simply that they had spent so many years out of touch with new ways of thinking.

Because of their age, these particular managers had been by-passed and had even, in some cases, suffered loss of status. The training program gave them the necessary stimulus to blossom out and once more become an asset to their company.

Deprivation Through Poor Supervision

Fleishman's well-known study of four groups of 30 foremen each who were sent by International Harvester to a school in Chicago for two weeks of intensive human relations training uncovered another form of deprivation. Fleishman administered questionnaires to the trainees, their subordinates, and their superiors in an effort to measure how the course affected the considerateness and leadership (or goal-defining abilities) of the trainees.

Before and after tests on the trainees themselves showed a marked improvement in their own awareness of their responsibilities in these two areas. Unfortunately, this improvement was not entirely reflected in on-the-job behavior—the subordinates of the foremen who had taken the course rated them *less* considerate (although more active in defining goals) than before. It was also found that the morale of the foremen who had completed the course was lower than it was before they were sent to school.

Further investigation disclosed that the foremen's superiors had their own ideas on how to run a shop and that the foremen had to conform to these ideas regardless of what they had been taught. The consequent conflict and frustration accounted, of course, for

the foremen's low morale and their lack of consideration for their own subordinates.

This study has often been pointed to as a reason for starting management development training at the top. The fact that the trainees did actually learn from the course, even though the training failed to "carry over," also suggests, however, that those managers who work under poor superiors and thus lack exposure to the right supervisory climate will be more readily stimulated by coming in contact with progressive supervisory practices than those who are not so deprived.

Deprivation Through Specialization

A third kind of deprivation is suggested by a study of two groups of executives in the Syracuse plant of the General Electric Company who participated in a 16-week discussion course on human relations. One group was composed of production executives and the other of engineering executives. The agenda and the discussion leader were identical, however, in both cases.

Before and after tests were given to both groups as well as to control groups of production and engineering executives not participating in the training. The results showed that the engineering group underwent significant changes as a result of the training, but that the manufacturing group seemed to be unaffected by it.

The simplest explanation for this difference appears to be that production executives have had years of concentrated exposure to human relations problems and their solutions while engineers, on the other hand, have usually had only a minimum of supervisory experience and are relatively naïve about handling people. In other words, engineers, because of their professional specialization, are deprived of the opportunity to become sophisticated about human relations and, therefore, are more readily stimulated by a course on the subject.

Implications of the Studies

Here, then, we have three studies, all pointing to the fact that it is the "poor" in experience (not in aptitude or interest) who "get richer" in a management training program. If this assumption is correct, it shows that to make the most of such a training program, the company should first ascertain who needs it the most. Which employees who, because of age (or, possibly, sex) have consciously been overlooked as candidates for development? Which ones have been working for bosses who themselves are known to be poor supervisors? And finally, which employees have only a meager knowledge of managerial skills because of the sheer restraints of their occupational specialization?

If employees such as these are selected for candidates in management development courses, the results will more than likely be positive and profitable. If, however, the programs focus only on "high potential" people or "crown princes," they may realize nothing more than the pointless aim of gilding the lily.

Of course, to adequately evaluate which managers are likely to get the most out of management training is rather more complicated than is suggested here. In addition to ascertaining who actually needs the training, we should also determine who wants it and who has the aptitude for it. However, since such a study has not yet been carried out, we must go along with the available findings and concentrate on need or—as we have designated it here—deprivation, in choosing the most likely candidates for enrollment in our management development programs.

Jury Duty Without Financial Loss

A SURVEY OF the compensation practices of 363 companies when their supervisory employees are summoned as jurors indicates that great strides have been taken in recent years toward enabling workers to perform jury duty without personal loss.

According to this current report by the National Industrial Conference Board, 302 of the companies surveyed have a specific plan for guarding their supervisors against pay loss during jury duty. The other 61 either have no formal plan but usually pay their supervisors as a matter of course or have a general leave program for executives that covers absences for this purpose. A few companies reported that they had no plan for compensating supervisors on jury duty because "the situation has never arisen."

In any case, the supervisors actually come out ahead when they serve on juries since, in approximately two-thirds of the companies with specific plans, they receive their full salary from the company in addition to whatever fees they are paid as jurors.

In 74 of the companies, either supervisors are paid the difference between their company salary and the jury fees they collect, or they are given full salary but required to turn over their jury fees to the company. For the most part, the remainder of the companies follow "varying pay methods." Only 12 companies place varying limits on the length of time they will pay supervisors serving on juries.

Not only do most of the companies surveyed pay their employees during their absence for jury duty, but many of them actually encourage such service. Situations can arise, however, when the loss of a supervisor would be harmful to the company and, in such instances, the employee may be asked to request the court to defer his service. Although some companies do make it a policy to have their supervisors excused as key employees whenever they are asked to serve, this right is reserved for emergencies only in most cases.

If the findings reported here are at all representative, the bridge between theory and practice in personnel management can clearly stand a lot of repair.

Personnel Management in Theory and Practice

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SOONER OR LATER, every conscientious teacher of personnel administration must ask himself whether he is not, after all, busily preparing his students for a world that never was. Does the average personnel department really operate according to the principles and practices set forth in the textbooks?

One way to answer this question is for the teacher himself to descend from his ivory tower and ascertain at first hand how the personnel function is actually handled in a representative cross-section of companies in his particular part of the world. With this end in view, the author recently made a systematic survey of industrial relations practices in 18 small, medium, and large companies in central and southeastern Wisconsin. One company in each size classification was selected for each of the following six business categories:[1] light manufacturing, service, food and related products, wood and wood products, chemicals and related products, and heavy metal fabricating.

The survey took the form of a planned interview covering 14 major topics commonly treated in personnel management texts. In all cases, the person interviewed was the man responsible for the industrial relations function, though his title varied from Personnel Manager or Personnel Director to (in two of the six largest companies) Vice President—Industrial Relations. It should be added that, since the interviewees were selected on the basis of their willingness to spend up to four hours talking

[1] The size classifications used here are small, 100-500 employees; medium, 500-1,500 employees; large, over 1,500 employees. No company with fewer than 100 employees was interviewed.

about their departments, the sample may have been biased accordingly.

In view of the admittedly limited scope of the study, only the high-light findings will be reported here. While it is not intended to suggest that they are typical of American industry generally, it is felt that they offer some helpful clues for more extensive research along similar lines.

At the time of the survey (June to September, 1958), employment—which had been declining for over six months—was beginning to stabilize. Only one of the 18 companies reported an increase in net earning for the past year, and employment trends seemed to reflect the profit picture. Reductions were the general rule, the cutback ranging from a fraction of 1 per cent to over 50 per cent. Even the more favorably situated companies reported a decrease in new hires and seven had been faced with a sharp rise in unemployment compensation costs—a new experience for them in recent years.

There was no evidence, however, that the functions of the personnel department had been cut back during the recession out of proportion to cutbacks in the company in general, though several companies did indicate that they were taking advantage of the business slowdown to effect economies that had been needed—recession or no. This was especially true in companies where business volume had been steady or increasing while net profits were declining. However, eight companies described their personnel activities as steady and four reported that they were on the increase despite the general downward economic trend.

One reason for this happy state of affairs may have been the fact that only one-third of the companies provided the personnel department with monthly budget details from which the costs of the various personnel functions could be accurately computed and controlled. Four departments operated under a general budget with quarterly or less frequent analyses and eight operated under no fixed budget controls at all. It may well be wondered how accurate the department's cost reports could be.

Fourteen of the 18 companies had factory unions and one of the 14 also had a white-collar union. Another had had a white-collar union, but it had been decertified some years previously. None of the companies expected office unions to be certified. Of the four non-unionized companies, two were strictly office operations.

Labor Relations

All the unionized small companies deal with a single union and all but one of the other unionized companies had more than one union. Most of the union contracts were a little over a year's duration and, while there did not seem to be any simple set of rules that dictated policy on contract periods, there was also no evidence of a trend toward a change in contract duration.

In the last 10 years, there had been only six strikes in all the companies

combined. Seven had not had a single arbitration case, seven had had one, and only four companies had had more than one. Grievances were almost impossible to tabulate since the procedures varied so. Some companies had no written grievance procedure whatsoever and others had monthly meetings to dispose of all complaints arising under the contract. Many of these complaints, however, could not be properly classified as grievances, falling more under the category of problems disposed of before they could become grievances. On a per company basis, the smaller companies were distinctly better off in terms of strikes and arbitrations. None of them had had a strike in the past 10 years. Viewing arbitrations from a per plant or per employee basis, the larger companies had a considerable edge over the smaller ones. However, if the low incidence of strikes, arbitrations, and grievances found here is representative, these would hardly seem to be significant indices of the industrial health of individual companies.

In nine of the unionized companies the personnel manager was a principal member or leader of the bargaining team. The works or plant manager was the principal bargaining agent in the other five companies with the personnel department assisting in a purely staff capacity. A fairly universal practice for the unionized companies was a dues checkoff privilege in one or more plants.

The two most widely used textbooks in personnel management devote a chapter each to job analysis and base a considerable portion of their data on staffing on the information gathered through it. Yet, only four of the companies interviewed had a continuing program of job analysis in operation. Ten others reported that they did "some" job analysis which generally seemed to mean either that they had a catalog of job descriptions which served as a reference in collective bargaining, or that they had at one time (most often in connection with a job evaluation program) done job descriptions but had not reviewed them recently. Actually, several of these particular programs had not been reviewed since 1946!

Staffing Functions

Employment tests in some form or another were used by all but one of the 18 companies. Reliance on tests ranged from the results furnished by the state employment service or a vocational school to relatively broad internally administered programs. Two companies relied primarily on a commercial test package. In general, however, the scope of the testing program seemed to coincide with the size of the company. Nine of the medium-sized and large companies had used private or institutional consultants.

Only five companies had conducted validation studies on their own employees and even here the studies were few and far between. This, however, seemed to be due not so much to a lack of awareness of the importance of research as to the tendency of the "front office" to accept the

subjective evaluations of operating personnel and to regard validation studies as a strictly expendable luxury.

In the most extensive programs, tests were administered to all applicants before hiring and to all employees being considered for promotion. In other companies, the program excluded certain classes of employees, such as "clerical workers with previous experience."

At least three companies regularly used a patterned interview, and one a weighted application blank. References were checked either by telephone, a retail credit bureau, or a rating form which was filled out by the referees. (Incidentally, it may be worth noting that the practice of using a credit check is not even mentioned by either of the leading texts.)

In two of the small and four each of the medium and large companies, a routine or "five dollar" physical was given to all new employees except seasonal or part-time workers. In two other companies, only the men received a routine physical. Audiometric examinations were given regularly in three companies and one (in the graphic arts) routinely gave an orthorater examination. In four companies, executives were given annual physical examinations, including an electrocardiogram in at least one company and a three- or four-day visit to a major clinic every year or two in another.

Training

Owing to the fact that two large and aggressive university-sponsored industrial training institutes are located within a 100-mile radius of all the companies interviewed, the extensive training activities reported by the group may be a bias of this particular sample. At all events, 16 of the companies said they periodically sent personnel to one or both of these institutes as well as to others less conveniently located. In addition, all the medium and large companies had their own formal in-plant programs, while six also had formal apprenticeship programs for some employees, mostly tool and die makers. The number of apprentices was relatively small, however, except for a printing firm, where apprenticeship constituted a substantial part of the training program. Supervisor training encompassing such topics as human relations, safety, company policy, instructor training, and work simplification, was almost universal. Eleven companies reported that they had used training consultants from time to time, particularly for their supervisory personnel.

Two of the medium-sized companies and three of the large ones had set up formal executive development programs. These ranged from relatively modest ones confined to enrollment in executive development seminars to extensive programs using understudy methods, counseling, seminars, and self-development procedures.

Tuition refunds for academic courses were made by six companies. The refunds—ranging from 50 to 100 per cent—were generally based on how closely the course was connected to the job, although company policy varied from liberal to very conservative

in interpreting the course-and-job connection.

Merit Rating

As a rule, the smallest companies did not use merit rating in any formal way, whereas all the medium and large companies did make some use of this technique. Only three companies, however, used merit rating regularly for both office and plant personnel, the others either rating regularly in the office but not in the plant or vice versa. Merit rating was also used selectively "for apprentices only" or for "executive development." The more complicated forced-choice or man-to-man types of scales were not used at all, most of the rating scales having been developed internally with a minimum of outside assistance.

Of the 14 unionized companies, three used a rating form for follow-up of probationary employees. The remainder said that their follow-up was informal or by word-of-mouth.

Six companies used merit rating as a part of their wage and salary administration program. The others either did not use merit rating in this connection, or did so only incidentally when considering promotions.

Wages and Fringes

Two companies in each of the three size categories paid on a straight hourly basis and seven had a standard-hour type of plan. Three of the large companies were on a per cent efficiency system and one of the small companies was on "piece rate." Some pattern related to size seemed to exist in the use of group bonus systems, since none of the large companies made extensive use of them whereas one of the small and two of the medium-sized companies had some type of group bonus.

The use of job evaluation was difficult to assess because a number of companies which had established it had permitted their systems to slide into partial disuse and also because some companies used job evaluation for salaried personnel only while others used it for production employees as well. Actually, two-thirds of the companies had active job evaluation plans, 10 being point systems, one a combined point-and-factor-comparison system, and one a job classification system. Among the small companies, none used job evaluation in both shop and office, and only two had active systems. In the medium and large companies, however, five out of six had one or more systems in effect and most seemed to use job evaluation over a wide range of jobs.

Only one small company had no fringe benefits incorporated in its wage package; two other small companies provided only medical and surgical coverage; and the rest offered some combination that included two or more such benefits as pension, disability, and life insurance. The emphasis seemed to be about equally divided between voluntary and mandatory programs with a number of companies requiring participation in one phase but not in another, resulting in a wide variety of patterns. Distinctions were also made between factory and

office, salaried and hourly, and executive and non-executive personnel as to the kinds of programs and methods of participation. More or less equally divided were company-paid and split premiums, the proportion of cost borne by the employee in the latter plans being 50-50 in most cases.

Of the 15 companies with retirement plans (all the medium and large companies and half of the small ones), seven were non-contributory. There was only one fully vested non-contributory retirement plan and full vesting after 10 to 15 years was reported in three other plans, one of which also provided for partial vestings after a year. Vesting of the employer's contributions with the employee was not a usual practice.

A majority of the companies handled retirement funds through a trust company and employed actuarial consultants to set up the costs. Slightly under half purchased annuities; one company paid retirement benefits out of current funds. Half of the companies had a definite policy on retirement age, the most common age mentioned being 65, although some companies made distinctions between office and factory, hourly and salaried, and men and women workers. Several also made specific provision for early retirement.

Other Benefits and Practices

Among other benefits and practices uncovered by the survey, the following may be noted:

Sickness and accident. Seven companies had explicit provisions for sickness and accident benefits (in addition to workmen's compensation) either through company policy or insurance.

House organs. Though there seemed to be very little relationship between company size and the publication of a house organ (two-thirds of the companies issued them) as might be expected, the more ambitious efforts in this direction were found among the larger companies.

Suggestion systems. Of the four companies actually using suggestion systems, three were medium-sized and one large. Three other companies said that they were considering suggestion systems confined to work simplification.

Food service. Two-thirds of the companies operated cafeterias. In most cases, these were the responsibility of the personnel department. All the companies subsidized this activity at least to the extent of providing space and utilities and, with two exceptions, also contributed to operating costs. The rule of thumb that seemed to hold for most plants was a dollar a month per employee for cafeteria subsidy. In general, the provision of cafeteria service was related less to company size than to the location of the plant and the length of the lunch hour.

Recreation. Every company gave some support to recreation programs, ranging from the payment of bowling fees for the company team to the employment of a recreation director with a degree in physical education. In most cases, the profits from company vending machines were used to pay for the recreation programs which

were generally handled by either an employee committee or an employees' association.

Vacation policy. Paid vacations were taken for granted in all the companies studied. As was to be expected in an area survey, there was a high degree of uniformity in company policies as regards vacations—one week after one year, two weeks after two years, and three weeks after fifteen years were the general rule.

Counseling. In view of the widespread academic interest in employee counseling, the fact that only two companies specifically designated counseling as a function of the personnel department is worth noting. However, the ruling of the Wisconsin Supreme Court in December, 1958, that a work-incurred traumatic neurosis is a compensable injury may help to revive interest in this classic personnel function, at all events in this area.

Personnel records. The records of most of the personnel offices surveyed seemed to meet the bare minimum required by law. Except for payroll records, only two companies had any substantial cross-reference system for personnel data, the basic record usually being a file folder, sometimes supplemented by a "change of status" card. Two companies had a keysort or speedsort record and none kept any kind of electronic data cards except for payroll purposes.

Only eight companies maintained a monthly or weekly analysis of turnover figures by department, job classification, and so forth. (The fact that in 13 companies direct turnover costs had been close to or at a minimum until the fall of 1957 may account for this.)

Consequently, research activities were limited. Eleven companies had done virtually no personnel research and only two or three at most had a program of continuing research that could be described as a recognized function of the personnel department. Though nine companies had conducted one or more attitude surveys, at least five of these were one-shot affairs arising out of a particular situation, e.g., "We wanted to know why the plant went union," or "[the personnel director] did it as a requirement for his master's degree."

Exit interviews. Only five companies conducted exit interviews for both office and factory employees. Three used them on office personnel only, and two reported that they had tried and subsequently abandoned such programs.

Some Questions for Further Study

While it would be foolish, of course, to generalize from this one small sample, the findings raise a number of questions that might well be clarified by further research. It would be interesting to know, for example, how far what might be called "personnel mindedness" is affected by such variables as type of business, unionization, and company size. No evidence was forthcoming from this little study that more (or less) is spent on per-

sonnel functions by certain kinds of businesses, or by unionized as opposed to non-unionized companies. In fact, in this particular sample the two companies that could safely be ranked as the most and the least personnel-minded were both non-union. Though this may indicate that there is more uniformity among unionized companies and more variability among non-unionized ones, obviously the data here are insufficient to warrant any definite conclusions on this point.

So far as the effects of company size are concerned, the study indicates that while small companies, with notable exceptions, seem to attach considerably less importance to personnel activities (even after due allowance has been made for the effects of size on the specialization of functions), medium-sized companies offer programs that are as extensive and varied as those of large ones, even at a higher cost per employee and certainly at the price of a higher personnel ratio.

Another question posed by the findings of this study is, how good are personnel statistics? Are the personnel records of the average company sufficiently detailed and uniform to provide benchmarks and to make personnel statistics reliable indicators of personnel activity? The findings reported here hardly indicate that statistical surveys in the personnel field have much value, especially when the tool used is a questionnaire. Such uniformity as has been achieved through the mandatory records imposed by Workmen's Compensation Laws, Unemployment Compensation, and Social Security is a far cry from the degree of standardization now existing in, say, accounting procedures. And there seems to be little evidence of readiness on the part of operating personnel managers to do more than the law requires.

The perennial question, "Is personnel management a profession?" raises its head in any attempt to compare theory and practice for, as Yoder[2] has maintained, professionalization is measured by the degree of union between the two. In keeping with this definition, he sets forth seven criteria that are inherent to any profession: standardized training, standardized practice, information exchange, professional literature, continuing research, professional ethics, and an attitude of learning. Applying these criteria to the companies studied, it can only be concluded that personnel management still has a long way to go before it achieves the kind of symbiosis that exists in the traditional learned professions such as medicine and law.

This conclusion is not meant, however, to be a reflection on the practitioner. It may be that his academic counterpart is not sufficiently sensitive to the problems of the operating manager, or that he is drawn to problems that are most researchable rather than most important. By combining the massive forces of the electronic data-processing installation and the ques-

[2] D. Yoder, *Personnel Management and Industrial Relations*, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1956, pp. 25-26.

tionnaire, the researcher has at his disposal an almost effortless mill that will crank out mountains of statistics in the shortest possible time. Such statistics, by virtue of their sheer bulk, obscure the fact that most of the important problems of personnel management involve the behavior of individuals or small groups.

It is not, of course, surprising that the gap between theory and practice should be especially wide in the small business operation. Very often, in a small company, one man performs all the varied functions that in a larger organization would be assigned to half a dozen specialists or more. The published material in the field tends to overlook this fact and to concentrate on the larger and more highly professionalized operations. Consequently, the student planning a career in personnel management is all too likely to imagine that the practices of General Electric or IBM are typical of business in general.

One fact that emerges from this study is the clear need for more firsthand investigation of personnel practices actually being followed by representative companies today. With an accurate picture of existing practices as a starting point, it will then be possible to talk in more realistic terms of the methods and policies that really are within the scope of the average company. But who is to do the necessary research if the operating manager is too pressed for time to undertake it and if the professors are too preoccupied with the theoretical aspects of personnel management to be bothered with it?

Perhaps the wealth of under-utilized talent in our graduate schools could start the ball rolling. The fact that many of these students never have the opportunity to do "live" research is both unfortunate and unrealistic—we must get them away from the library and the calculator and out into the field. Certainly there is no shortage of problems for them to sink their teeth into; the bridge between theory and practice in personnel management can stand a great deal of reinforcement, and the graduate students may be just the ones to do the job.

Must special incentives be offered for hazardous or unpleasant work—and if so, what kinds of incentives are given? Here are the findings of an Air Force survey on this subject.

Incentives for Hazardous Work: A Survey

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AMERICAN industry may soon be benefiting from the peaceful uses of nuclear power and the increased application of radioactive processes—a development that will affect personnel and manpower practices in a variety of ways. One problem likely to arise in this connection is that of obtaining personnel who are willing to work with or around radioactive material, a prospect that possibly not many people can be counted upon to welcome wholeheartedly. As nuclear power increases in use, this occupational hazard may become a concern to a considerably larger segment of the workforce than now. Will it be necessary to offer special incentives for work of this kind and, if so, what principles should govern their application?

In order to determine if incentive pay should be offered to induce employees to work with radioactive materials, the Air Force recently made a survey of the practices presently employed by industry and the government to induce employees to accept hazardous or unpleasant working conditions. Specifically, the study aimed at finding out what job conditions require the use of incentives, how these conditions are evaluated, what attitudes management and labor hold toward such rewards, and what kinds of incentives are offered.

A list of occupations considered hazardous enough to require higher insurance rates for their incumbents was obtained from a leading insurance company and visits were then

NOTE. The research reported in this paper was sponsored by Personnel Laboratory, Directorate of Laboratories, Wright Air Development Center, under ARDC Project 7734, Task 17103.

arranged to various companies, labor organizations, and governmental agencies in which such occupations were found. In all, 39 organizations were visited, including several air lines and companies in the oil, chemical, construction, and steel industries. Inasmuch as no other formal studies have apparently been made in this area, the findings of this survey may be of interest to management in general.

In considering what kinds of situations may justify the payment of incentives for exposure to hazards or unpleasant working conditions, it is important, first of all, to distinguish between hazard and toxicity. Hazard usually refers to the injuries which the worker runs the risk of being exposed to in the performance of his job, such as falls, burns, or being struck by moving objects. Toxicity refers to the harmful properties inherent in the materials the worker uses, such as acids, lead, asbestos, and beryllium. The Utah State Department of Health has published a useful classification of such toxic materials.[1]

Factors Determining the Payment of Incentives

One prime factor affecting the decision to offer an incentive for hazardous work, the survey found, is how much experience an industry has had with the condition in question. Thus, if a company undertakes a new process or line of work, there is a greater probability that some kind of premium will be given. At one time, for example, some oil refineries paid premiums to workers operating the high-pressure, high-temperature equipment; and we came across another company that, when operating a small arms ammunition plant during World War II, had paid premiums because of its unfamiliarity with the process and its desire to make employees safety conscious. That experience with a hazard reduces the likelihood of a premium's being offered is evidenced in the reluctance of the United States Air Force to grant hazard pay to military personnel for "high time"—that is, work performed off the ground on such structures as towers or poles. The USAF feels that the safety equipment and work habits that have been developed through the years have reduced this hazard to a minimum.

The relative number of employees exposed to the condition is another important factor in determining whether or not premiums are to be paid. If most or all employees are exposed to the risk, it becomes a condition of employment and usually no special incentive is given. If, however, only a few are affected, incentives are more likely to be offered.

How frequently the hazard occurs is another determining factor. In a construction company, for example, the employees receive no premiums for the high work usually encountered in the firm's day-to-day activity. However, when the men have been

[1] *Useful Criteria in the Identification of Certain Occupational Health Hazards.* Division of Industrial Hygiene, Utah State Department of Health, Salt Lake City, 1945.

required to work at two or three times the usual height, premiums have been paid.

To overcome hazards or toxicity the worker sometimes has to use cumbersome protective equipment, a fact that in itself creates a new job condition. In such situations, incentives are likely to be granted not for the hazards but for the inconveniences endured by the worker. Thus, premium pay is given for wearing protective clothing, such as rubber suits or respirators, rather than for the risks that make such garb necessary. In a nuclear plant manufacturing fuel elements, for example, the men had to wear special clothing and were obliged to wash before leaving work. Because they could not easily make use of the company cafeteria, they were paid a higher wage to compensate for this inconvenience.

The use of special or protective equipment sometimes goes hand in hand with higher skill requirements. The higher wages paid in such cases usually reflect this increased skill, not the fact that special equipment must be used. Thus, the janitors at one nuclear installation are paid higher wages because they must exercise great care and are required to operate special equipment when cleaning up radioactive spills; and, in another plant, a higher rate of pay is given to janitors for cleaning light fixtures suspended some distance above the floor level, because of the increased care and skill needed to accomplish these tasks safely.

Actually, few of the companies visited make a practice of paying premiums for hazardous or unpleasant working conditions. Most of them take the view that such remuneration has been earned in the going rate developed through negotiations or job evaluation. Where the rate of pay has developed through negotiation or tradition, it is not possible to ascertain how much credit has been given for hazards or unpleasant working conditions. Some light on this question may be gleaned, however, in the cases where job evaluation was used.

Rating of Hazards Through Job Evaluation

It is often thought that the compensation for hazardous or unpleasant working conditions given in job evaluation systems is not really comparable to the payment of special premiums, since the hazards factor comprises only a small percentage of the total number of points given to a job. Lytle [2] has shown that in most plans the points allotted to working conditions are usually between 10 and 20 per cent of the total; and Lawshe and Satter [3] have pointed out that the extent to which a job characteristic contributes to the whole cannot be determined by inspection of the scale and that the contribution may differ greatly from what was intended. In factor analyses of several job evaluation plans, Lawshe found that Skill

[2] C. W. Lytle, *Job Evaluation Methods*, Ronald Press, New York, 1954, p. 64.

[3] C. H. Lawshe and G. A. Satter, "Factor Analysis of Point Ratings for Hourly Paid Jobs in Three Industrial Plants," *Journal of Applied Psychology*, Vol. 28 (June, 1944), pp. 189-198.

Demands contributed most of the variance while job characteristics (Working Conditions) contributed most of the remaining variance. In the plans he studied, the contribution of hazardous working conditions varied from 1 to 19 per cent.

However, when the number of points for hazardous or unpleasant working conditions given to a particular job is considered in relation to similar points given the majority of other jobs within a plant, one finds that the increased credit often translates itself into a sizable increase in the hourly rate of pay. For example, in one system used in the steel industry, each point is the equivalent of 6.3 cents in pay. Although the average rating for hazards is .4, exceptionally hazardous jobs get 2.0 points—a monetary difference of more than 10 cents per hour. For extreme surroundings, the monetary difference can amount to about 16 cents per hour.

The survey also found evidence that extremely hazardous jobs are sometimes very difficult to rate adequately under formal evaluation systems. When the compensation determined by job evaluation is not sufficient to induce men to work on a job, some adjustments are necessary. In one instance, this consisted of pegging the Lead Burner's rate of pay two job-classes higher than where the formal system placed it. In another case, no detailed rating was attempted for extremely hazardous jobs, such as emergency rescueman in a mine. Another company, at the time of interview by the author, was in the process of changing its evaluation system in order to give more weight to surroundings and hazards in evaluating underground jobs.

How Management Views the Problem of Hazard

Generally, the policy in the organizations visited is to avoid the payment of hazard incentives if at all possible. Management feels that there are no real hazards in most industries, a fact that is reflected in the fine safety records compiled. In most cases a worker is safer on the job than away from it because of the extreme safety-mindedness of most large industrial concerns. Also, it was pointed out that new processes are not introduced until toxicity or hazards have been controlled or adequate operating procedures perfected.

A common sentiment expressed by management in the companies studied was that if they were to recognize the presence of a hazard they would then be confronted with the problem of judging its monetary value. How much do you offer a man to risk his life? What is the relative seriousness of injuries which might result from a particular hazard? Among a mobile work force, which employees should be reimbursed for exposure?

Another reason given by management for not paying premiums for hazardous working conditions is the voluminous and costly record keeping that is usually required to carry out an incentive plan. In some instances such plans have broken down or have

been abandoned for administrative reasons. For example, maintenance workers in one oil refinery often do not turn in reports for short periods of high time because it is more work than it is worth to them. Again, a contracting firm reported that when it paid laborers 15 cents per hour more for operating jack hammers, it soon became the practice for every laborer to operate a jack hammer some time during the day and also to receive the highest rate earned during the day as his rate of pay for the whole day. To end the disputes resulting from such practices, the contractors negotiated a new contract in which a general increase of 20 cents per hour was granted to the laborers and the premium pay was eliminated.

The management people surveyed also feel that adequate remuneration for hazardous or unpleasant working conditions is provided in the base rate of pay as determined by supply and demand or as formalized by job evaluation.

The Union Approach

Labor organizations are, of course, highly interested in the health and welfare of their members. Attesting to this fact is the inclusion in most labor contracts of procedures for expeditious handling of grievances resulting from unsafe working conditions. Also provided for in most labor contracts is the right of the worker to obtain relief from an unsafe job without loss of the right to return to the job later after the unsafe conditions have been corrected.

In their quest for a fair day's pay, unions do seek reimbursement for the conditions surrounding a job. However, such reimbursement usually falls into the base rate for the job and is not separately identifiable as a special premium. In a study of contract clauses conducted by the Bureau of Labor Statistics,[4] only 5 per cent of 464 agreements in 34 industries specifically stipulated payment of special rates. However, this may not be a true index of prevalence, since many premiums appear in side or local agreements and not in the master contracts which were the source of this study.

Labor's approach to the question of special incentives is influenced by many factors. If the union is able to win adequate wage increases for all its members, it may not be interested in special incentives as a means of obtaining higher wages for some of them. This situation was found in the coal-mining industry, where no special hazard pay existed, although incentives have to be given for similar conditions in other forms of mining. Sometimes, the concept that all craftsmen should be capable of doing all the work found in their trade is given as the reason for some local electricians' unions not seeking special pay for working on high-voltage wiring.

During the survey, each organization was asked whether or not it offered incentives for hazardous or un-

[4] *Premium Pay, Holiday, and Shift Provisions: Selected Union Agreements, 1948-1949.* Bureau of Labor Statistics, Washington, D. C., 1949.

pleasant working conditions. The resultant information was supplemented by a review of several union contracts in pertinent industries. Although, for the individual companies concerned, such incentives were rare, or even nonexistent, a collection of the instances uncovered shows an appreciable number of such premiums. A summary of the monetary incentives offered, in terms of conditions and types of workers involved, is shown in the accompanying table.

Non-Monetary Incentives

Besides money, there are several other kinds of incentives which may be used. While these perquisites may not be readily identified as incentives since they serve the same purpose, they deserve to be included in this report.

One technique used by a construction company to reward employees who willingly undertook undesirable or hazardous jobs was to give them more desirable assignments in the future.

The issue of work clothes and the allowance of paid clean-up time at the end of a shift is a form of incentive frequently offered employees on dirty jobs. The latter practice—that of allowing paid clean-up time—appears to be growing.[5]

Another procedure used on dangerous or unpleasant jobs is the use of "spell hands," i.e., employing two people who alternate in performing the task, thus achieving only the amount of work accomplished by one man's working full time. Examples of this occur in steel mills where the workers are exposed to extremely high temperatures. This incentive is given in addition to the monetary allowance for Working Conditions established under the job evaluation plan.

Some hazardous jobs are made more desirable by relaxing rules against smoking or by allowing more frequent rest periods. This serves to reduce tension and also increases the status of the job in the eyes of the workers.

Certain protective occupations, such as policeman or fireman, are often made more attractive by more liberal retirement and medical-care policies than those available to other personnel employed by the same organization. These additional benefits are established because the work is considered to be more hazardous, and because the above groups are able to exert a greater influence on the forming of such policies. This practice appears to be fairly common in government agencies but does not seem to exist in private industry.

Since, as has been said, the purpose of the study was to determine what incentives, if any, were needed to induce people to work with radioactive materials, the kinds of incentives found in the nuclear industry may be briefly mentioned in this report.

In a recent study of incentive pay practices within this industry, Smith

[5] "Paid Time for Washup, Cleanup, and Clothes Change, 1952-1953," *Monthly Labor Review*. April, 1954, pp. 420-422.

Monetary Incentives for Hazardous or Unpleasant Working Conditions

Conditions	*Types of Workers*	*Incentives*
High time work occurring at various distances above the ground	Painters, electrical workers, oil refinery maintenance workers, chemical workers	8 to 50 cents hourly premium; time-and-a-half
Dirty work such as cleaning tanks and scaling boilers	Shipyard workers, chemical laborers, oil refinery laborers	5 to 16 cents hourly premium
Dusty work	Ore smelting workers	4 cents hourly premium
Underground work	Gypsum miners, construction laborers	8 to 20 cents hourly premium
Handling explosives	Longshoremen, maritime workers	Time-and-a-half; additional 10 per cent monthly rate
Lead burning and welding in enclosed spaces	Shipyard burners and welders, iron workers (inside fabricators)	25 cents hourly premium; time-and-a-half
Handling toxic materials such as crude sulphur, creosoted materials, pitch, and soda ash	Industrial workers, shipyard workers	8 cents hourly premium; time-and-a-half
Inconvenient work such as carrying equipment where no transportation is available or in uncivilized territory where hostile natives might attack	Geophysical surveyors	$25 monthly premium

and Cox [6] found that out of 22 companies surveyed none paid extra for hazards and only two felt that there might be justification for hazard pay under any circumstances. Several of the companies pointed out that there is a certain glamour attached to nuclear work which seems to attract people. The possibility that this characteristic may be developed as an incentive in itself would seem to be worth further study.

The Atomic Energy Commission does not pay its employees for exposure to hazardous conditions because no sufficiently hazardous conditions exist and also because there is no statutory authority for such pay. The Commission also discourages extra payment for radioactive hazards by its contractors, preferring to exert pressure for the elimination of such hazards through improved safety practices.

Conclusions

On the whole, the survey's findings indicate that incentives for hazardous or unpleasant work are based on the concept of supply and demand. This

[6] R. G. Smith, Jr. and J. A. Cox, Jr., *Methods of Reduction of Psychological Stress Due to Radiation*, Air Force Personnel and Training Research Center, Lackland Air Force Base, Texas, February, 1957. (Development Report AFPTRC-TN-57-19, ASTIA Document No. 098922.)

is especially true when the incentive is a monetary one. It is felt that in order to get people to work on a job which has hazardous or unpleasant characteristics it is necessary to pay more than the regular rate. The fact that this has proved to be the case in several instances has caused this precept to be generally applied to other situations without empirical tests. But it is also possible that the supply and demand situation reflects other influences, such as actuarial information on shortened job tenure caused by death, injuries, and bodily deterioration; or the simple desire to pay a fair return for the special services offered. At present, no systematic account of the variables that come into play in motivating people to accept hazardous employment is available.

Although the survey does not provide a basis on which to evaluate the efficiency of various incentives, it does point out certain situational characteristics which should be studied in order to determine their relationship to the motivational factors involved. Thus, studies are being planned on the value systems of different work groups, and how far the need for or effectiveness of incentives is influenced by such variables as age and education. The findings of these projected studies should contribute a great deal toward making practical decisions regarding incentive pay for hazardous or unpleasant work.

Executive Death Benefits

PERCENTAGE-WISE, death benefits from Group Life insurance for executives in the $15,000-a-year bracket and up decrease as their salary increases, according to a recent Conference Board study of 40 leading companies in different industries. Thus, in half the companies participating in the survey, death benefits for executives earning $15,000, $25,000, or $35,000, amount to between one and two years' salary, while in 30 to 40 per cent they represent 2 years' salary or more. But executives in the $50,000 to $100,000 bracket are covered to the amount of only one year's salary or less in at least half the companies.

In 20 of the companies, the premium cost is shared jointly by the company and the executive. The other companies pay all or part of the coverage themselves. Where part payment is made, the remaining premium cost is shared with the executive. The rate of payment in such cases ranges anywhere from 30 to 68 cents a month for each $1,000 of insurance not paid for entirely by the company.

In addition to these lump-sum life insurance benefits, almost half the companies pay a part of the deceased executive's salary to his survivors. The amount and duration of these payments, however, varies in each case.

Studies of the validity of forced-choice performance ratings have not yet turned up any compelling reason for abandoning other kinds of ratings in favor of this new technique.

Forced Choice: Better Than Other Rating Methods?

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EVEN AT THEIR best, the conventional rating scales, such as rank order, forced distribution, graphic, and check list, have been found to yield only a semi-objective evaluation of performance on the job. Dissatisfaction with the results of these techniques led, during World War II, to the development by a group of Army research psychologists, of the forced-choice performance scale. Based on the concentrated application of sound psychological theory, the forced-choice rating method was given experimental tryouts before its release in 1947, and was almost immediately hailed as a signal advance over older techniques.

Since that time, a number of attempts have been made to evaluate the validity of forced-choice performance scales as indicators of employee performance. But the findings of these studies have been scattered over a variety of technical reports and publications, making it difficult for the personnel practitioner to arrive at an overall assessment of the merits of forced-choice performance rating. It is my purpose here to offer an overview of these findings, and in so doing to provide at least a provisional answer to the question: Is this new technique superior to the older types of ratings in achieving an objective evaluation of employee performance?

Since the development of the forced-choice method has been fully reported elsewhere,[1] no attempt will be made

[1] Staff, Personnel Research Branch Section, Adjutant General's Office, U. S. Army, "The Forced Choice Technique and Rating Scales," *American Psychologist*, Vol. 1 (1946), p. 267; D. E. Sisson, "Forced Choice, The New Army Rating," *Personnel Psychology*, Vol. 1 (1948), pp. 365-381; and M. W. Richardson, "Forced-Choice Performance Reports," PERSONNEL, Vol. 26 (1949), pp. 205-212.

NOTE. The opinions expressed in this article are those of the author and should not be construed as reflecting the views or endorsement of the Department of Health, Education, and Welfare.

here to cover this aspect of the subject. But it may perhaps be worth recapitulating that a forced-choice performance scale consists of a series of tetrads, i.e., sets of four phrases or adjectives, relating to work performance and/or personal qualifications. A typical forced-choice scale usually contains from 15 to 50 tetrads, depending upon the level of the job being evaluated and the complexity of its duties.

The rater is asked to indicate which of the four statements is most and which is least characteristic of the ratee. If one of the two favorable phrases is checked as most characteristic of the ratee, he receives a plus credit; if, however, the unfavorable element is checked, no credit is given. Similarly, credit is given when one of the unfavorable elements is checked as least characteristic.

"Rater halo" and other shortcomings of conventional techniques, it is claimed, are eliminated by the fact that only one of the favorable elements is related to success on the job and only one unfavorable item is associated with poor performance or personal shortcomings—but the rater is not told which is which.

U. S. Army Studies

Among the evaluation studies that have been carried out on the forced-choice performance scale let us consider first four conducted by the U. S. Army:

1. In the first study, 286 brigadier and major generals who had been rated on a forced-choice performance scale were then rated by their peers, each officer being asked to evaluate those generals whom he knew well enough to rate. The validity coefficients, corrected for the restricted range of the sample, were .46 and .43 respectively.[2]

2. In another study, little difference in validity between ratings of 400 officers made on an over-all evaluation form and a forced-choice performance scale was found.[3]

3. Of three types of ratings on 400 officers in another investigation, an eight-step graphic scale had the highest validity (.53). A check list had .44, and a forced-choice rating scale, .41.[4]

4. In a comparative study involving two types of forced-choice items that were used on a group of Army officers in 1946 and 1949, the validity coefficients remained reasonably the same. The validity indices for the two years in question showed correlation coefficients of .60 for favorably-worded phrases and .52 for unfavorably-worded phrases.[5]

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[2] *The Validity of Officer Efficiency Report, WD-AGO Form 67-1, for General Officers,* Personnel Research Branch Report No. 792, Department of the Army, AGO, Washington, D. C., American Documentation Institute, 1952.

[3] *A Study of Officer Rating Methodology, IV: Effect of Forced-Choice Items on Validity of Rating Scales,* Personnel Research Branch Report No. 903, Department of the Army, AGO, Washington, D. C., American Documentation Institute, 1952.

[4] *A Study of Officer Rating Methodology, VIII: Validity of Two Types of Rating Techniques: Forced-Choice Items and Rating Scales,* Personnel Research Branch Report No. 907, Department of the Army, AGO, Washington, D. C., American Documentation Institute, 1952.

[5] *Studies of Officer Efficiency Report, WD-AGO Form 67-1, in Operation II: Consistency of Validity of Forced Choice Phrases,* Personnel Research Branch Report No. 8173, Department of the Army, AGO, Washington, D. C., American Documentation Institute, 1952.

Now let us look at the findings of some studies that have been made by investigators outside of the Army.

Other Studies

1. In an independent investigation, forced-choice and graphic ratings were obtained on Army personnel. The findings indicated that, for administrative purposes, the graphic ratings had a higher meaning and were skewed.[6]

2. In another study, the forced-choice method was used to develop a rating scale for evaluating personnel counselors and was experimentally applied in measuring the job proficiency of 37 of the counselors. Comparisons with graphic scale and peer ratings on the same group revealed some advantages of the forced-choice scale over the other two types of ratings.[7]

3. A 28-tetrad forced-choice evaluation scale was used in another instance to rate retail store managers. The scale was constructed according to the standard procedures established by the employee relations staff of a well-known industrial firm.[8] An *a priori* key was developed but, because of the limited size of the available sample, item analysis was precluded. Previous research had indicated that adequate validity could be secured with considerably fewer than 28 tetrads. Consequently, 10 sets of 10 tetrads each were selected on a random basis and adjusted for excessive overlap. These were then validated against a supervised adjusted objective criterion, with the validity coefficient of the 28-tetrad *a priori* key being .60. The resultant validities of the 10 random 10-tetrad keys ranged from .52 to .62.

4. In a research project conducted by a leading flour milling company, scores on a forced-choice performance report made by 61 first-line production foremen showed a correlation coefficient of .73 when validated with overall evaluations given by 30 department heads and plant managers.[9]

5. Another study concluded that the forced-choice section of an experimental work performance report was highly effective for evaluating the proficiency of physicians, dentists, research personnel, and nurses. Of 24 validity coefficients, it was found that 41.7 per cent were .62 or higher with all but one being significant at the .01 level or below.[10]

6. In a more recent investigation[11] designed to construct a valid forced-choice performance rating scale for pharmaceutical salesmen, it was found

[6] E. K. Taylor and R. J. Wherry, "A Study of Leniency in Two Rating Systems," *Personnel Psychology*, Vol. 4 (1951), pp. 39-47.

[7] L. Stangas and L. L. McQuitty, "A New Application of Forced Choice Ratings," *Personnel Psychology*, Vol. 3 (1950), pp. 413-424.

[8] E. K. Taylor *et al.*, "Short Forced-Choice Ratings Work," *Personnel Psychology*, Vol. 7 (1954), pp. 245-252.

[9] L. Huttner and R. A. Katzell, "Developing A Yardstick of Supervisory Performance," PERSONNEL, Vol. 33 (1957), pp. 371-378.

[10] S. H. Newman *et al.*, "Forced Choice and Other Methods for Evaluating Professional Health Personnel," *Psychological Monographs: General and Applied*, Vol. 71, No. 10 (1957), pp. 1-27.

[11] J. H. Nagel, "The Construction and Validation of the Forced-Choice Performance Rating for Pharmaceutical Salesmen and Analysis of the Characteristics Contributing to Overall Competence and Efficiency of These Men," *Doctoral Dissertations Abstracts*, Vol. 15 (1955), pp. 229-230.

that, on the basis of a rank difference correlation between scores on the proposed evaluation scale and ratings for 200 salesmen made by 15 divisional sales managers, the forced-choice performance ratings were valid in all but two sales divisions on at least the .05 level of confidence. The coefficients of correlation were found to range from .53 to .89.

Conclusions

The findings of these studies indicate that although there is much to be said in favor of the forced-choice technique, some of the early claims about the consistently higher validity afforded by this type of rating procedure have not been borne out by experience thus far. On the other hand, while it must be conceded that this new rating method does not have a clear-cut superiority over older techniques in producing more valid performance evaluations, it does appear to insure greater objectivity in the rating process.

This, however, hardly seems a sufficient reason for an organization to scrap its present rating procedure in favor of one based on the forced-choice method, especially in view of the fact that the adoption of this technique entails the following prerequisites:[12]

- ► Trained technicians to develop the performance scale.
- ► A different collection of tetrads for each job or occupational group.
- ► A fair agreement on the criteria of success and failure.
- ► Willingness on the part of supervisors to rate their employees when they cannot even tell whether they are giving one person a more favorable rating than another.

On the whole, therefore, there would seem to be little to choose between forced-choice and traditional ratings, and further research is clearly needed to establish any decisive advantage in the new method. In particular, we need more studies comparing the validity of forced-choice ratings with that of other types of ratings. Validating forced-choice ratings against other criteria, such as peer ratings, may give us some clue as to their reliability, but does not tell us whether the same degree of effectiveness, if not more, might not have been achieved by the use of traditional rating methods.

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[12] N. R. F. Maier, *Psychology in Industry*, Second Edition, Houghton, Mifflin Company, New York, 1955.

Correspondence

The Executive Personality

To The Editors:

In his article, "The Executive Personality," in your January/February issue, Ephraim Rosen discusses the executive tendency to see others as good or bad, strong or weak, etc. "In other words," he states, "[the executive] shows *dichotomous thinking*, where all is black or white rather than a series of shades of gray. The basis of this dichotomy is largely a moral one. . . ." While I agree with Dr. Rosen that business executives should be moral, I wonder if morality is even the major reason for this dichotomous outlook.

In its place, I would offer the basic executive function of decision making. The executive must continually decide for or against. He cannot procrastinate by being neither for nor against (the shades of gray) unless he changes the context of the problem and decides (black or white) that the decision should be delayed. Thus, in his contacts with others, the executive must determine who is good or not good in various respects. Are these people to be trusted or confided in? If they are, then it can be advantageous to the company to trust or confide in them. But if they are not, then the executive is responsible for the consequences of trusting or confiding in them. And so it goes.

I would be very interested in Dr. Rosen's reaction to these remarks—even at some risk of becoming yet another trophy in his collection of "shrunken heads."

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To The Editors:

Mr. McDonell's suggestion is an interesting one, and undoubtedly contains much truth. But I don't think the necessity for decision making forms the basis of the executive's style of thinking, in a clinical or personality sense. My approach to the executive personality assumes that the executive has certain traits that are quite consistent among themselves, are largely stable and enduring over time, and have roots in very deep, even in unconscious, levels. As I see it, the executive's decisiveness, strong control, liking for people, and strong superego constitute such enduring and self-consistent traits that they are unlikely to emerge suddenly in an adult executive under the pressure of the business culture if there is no basis for them in the characteristics he brings to the job.

These traits, however, can be reinforced by the business culture and by job pressures, and the tendency to dichotomous thinking can be similarly strengthened. But I believe that the executive tends to think in this way before he ac-

tually becomes an executive, and that this trait is consistent with the others mentioned above. His style of thinking then makes it easier for him to avoid procrastinating, to decide, for example, whether someone is to be trusted or not, or whether this or that course of action should be followed. Since he gets rewarded for being decisive, his decision-making activities reinforce the very dichotomous thinking that made him decisive to begin with. To this extent, at least, Mr. McDonell certainly has a point, but I think the whole story is more involved than would appear from this point alone.

All this, however, argues only for the executive's style of thinking being deeply rooted in his personality; it does not prove that these roots are moral in nature rather than of some other kind. My statement that they are "largely moral" is really an extrapolation from some general personality principles and from observation of the Puritan component of American culture. General personality theory seems to indicate that a strong superego, that is, a built-in morality, goes with rigidity of thinking, and that superego strength is a more fundamental variable than style of thinking. The superego affects thinking more readily than vice versa. Similarly, Puritanism as a special variety of strong morality seems to lead both to a black-white style of thought and to emphasis on such traits as decisiveness and avoidance of delay. Hence, I think I would stick by the hypothesis I offered but am willing to add the corollary that decision making should be considered as an added factor.

Just how much weight should be given to it is a special problem in the general area touched on at the conclusion of my article: "Does a man choose a business career because he possesses certain traits or does he develop these traits through training, conscious or unconscious, while on the job?" My own bias, as evidenced here, is to leave room for both factors with somewhat more room for the first.

EPHRAIM ROSEN
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The Appraisal Interview

To The Editors:

Dr. Walter Mahler's review of my book, ***The Appraisal Interview,*** in your March/April issue points up a problem that was of great concern to me while searching for a title for the book: he states that the problem-solving method, the type of interview which seems most appropriate to me, is indeed valuable—but it is not an appraisal interview. I did, in fact, seriously consider entitling my book ***The Problem-Solving Interview.*** This title would probably have been more acceptable to Dr. Mahler, but I felt that it might be misleading since two clear-cut types of appraisal interviews are analyzed in the book.

Dr. Mahler agrees that the problem-solving interview might be effective in improving performance, but he contends that, since it is not an appraisal interview, my problem-solving approach is not a solution to the question of how to conduct appraisal interviews. Although he further agrees that the other two appraisal interview methods—the "Tell and

Sell" and the "Tell and Listen"—raise difficulties, he does not believe that they can be resolved by omitting the appraisal discussion from the interview.

In other words, he insists that the act of judgment, which I see as the source of the difficulty, must be preserved in the appraisal interview. However, if the purpose of the appraisal interview is to develop a subordinate (and this *is* undoubtedly the most common one), then an interview that best develops the man would seem more appropriate.

Furthermore, when I propose that the problem-solving interview be used in the context of an appraisal program, how much has the reader been misled? We find that a subordinate actually leaves with a more accurate impression of how he stands when his superior conducts a problem-solving interview than when he conducts a standard appraisal interview. We must recognize that communication may fail even when the telling is accurate, and that communication on a certain topic may take place when no words have even been spoken about it. As a matter of fact, many of the same topics came up for discussion in all three of the interview methods analyzed; but in the problem-solving method, these topics were seen as problems instead of faults or weaknesses.

Dr. Mahler's failure to mention my treatment of the separation of the functions of appraising and interviewing may have helped to make the problem-solving interview appear irrelevant. Entirely different notions of interviewing suggest themselves when one realizes that the appraisal may precede the interview, be done jointly during the interview, follow the interview, or be kept as an independent and separate function.

Initially I had planned merely to describe three methods of interviewing without revealing any personal preference in the matter. However, during the period of study, the problem-solving interview underwent a gradual process of development until it finally emerged as an interview that was of value beyond the context of appraisals. The trend of the change was one in which the topics discussed got farther and farther away from the subordinate himself and became more and more centered in the job activity. Finally, improving the job rather than the subordinate became the central theme. (This transition can be seen by comparing the last part of Chapter 1 with Chapter 10.)

The question now is whether the problem-solving approach has changed so much that it needs to be divorced from the appraisal program. Dr. Mahler agrees that a better appraisal interview is needed, but he feels that the objective of appraisal should be retained. My position is that appraisal and development are conflicting objectives and should be separated.

In Dr. Mahler's estimation, *The Appraisal Interview* is primarily of value to the administrator of management development programs because a new type of plan is indicated. However, I feel that all those responsible for conducting appraisal interviews should know how the three basic methods influence the reactions of subordinates. As a result they can better choose the method that conforms to the specific objective their interview is intended to serve. When

this selection is done carefully, skills increase because they are dependent upon both methods *and* objectives. More important, supervisors will be better able to cope with the reactions of their subordinates if they anticipate and understand these reactions.

In closing, I should like to add that I appreciate both the praise given my treatment of problem solving by Dr. Mahler and his suggestion that I write a separate book on the subject.

NORMAN R. F. MAIER
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Revival of the Car Pool

BACK WITH US once again is that popular transportation system of the "home front" during World War II: the car pool. The encouragement being given this rather gregarious mode of travel is reflected in the fact that more and more companies are providing bulletin-board space for employees seeking to form car pools and are offering choice spots on the company parking lot to pool members. A California aircraft company has even gone so far as to offer first choice of parking space to pools with three or more members and second choice to pools of two.

Why all this company interest in car pools?

(1) Traffic congestion is eased, thus decreasing tardiness as well as cutting down on absenteeism caused by accidents.

(2) Crowding up at company gates is alleviated, making fewer guards necessary.

(3) The size of company parking lots can be reduced.

(4) Car pools mean less time lost from work and lower transportation costs for employees; therefore, some companies reason, demands for raises can be postponed.

Employees see the following advantages in car pools:

(1) Gasoline costs are reduced—as are parking charges where free space isn't available.

(2) Because they no longer have to do their own driving every day, car pool members are under less of a strain. In addition, their wives get to use the car more often.

(3) Pool costs are often less than the costs of commuting by train or bus, and in many cases travel by car is quickest.

Another theory holds that car pools encourage friendships among the employees and thus make for good morale. But, of course, there are always exceptions—some wartime experiences indicate that many members just sit still and bear the ordeal silently and those who do talk are looking for arguments. Then, too, it has been pointed out that some people are under more of a strain as passengers than as drivers and also that unforeseen delays can occur as a result of car pools—when, for example, one member insists on stopping in for "a quick one" and all the others have to wait for him.

But such things probably happen only in isolated instances. At any rate, judging from the car pool's increasing popularity, the advantages seem to outweigh any such drawbacks.

personnel *bookshelf*

INDIVIDUAL BEHAVIOR AND GROUP ACHIEVEMENT. By Ralph M. Stogdill. Oxford University Press, New York, 1959. 352 pages. $5.00.

*Reviewed by George S. Odiorne**

If the working personnel manager has any doubts that the subject of human relations has gotten progressively more scientific and more complicated, Mr. Stogdill's book should set him straight. This is no book for the cracker-barrel school of human relations. Concentrating largely on the theoretical aspect of his subject, the author proposes a theory of "organization achievement" which is a subdivision of small group theory. (Small group theory, in case anyone hasn't been keeping up to date, is part of the broader subject which the laymen used to call human relations.)

The book is concentrated in scope—it has no truck with what the physical and social environment does to a group, but is concerned only with what happens inside it. Thus, it is most unlikely that this book will be abstracted in the *Reader's Digest* or even in the *Management Digest* since it has no interesting little indented examples of actual quotations from workers and grease-balls in the plant, such as make Chris Argyris' books almost readable. Nor does it draw any horrible caricatures of antidiluvian executives who make terrible mistakes (and wads of money) by being autocratic, nonpermissive, and intractable. It merely cites concepts and, by marrying off pairs of them, makes even more concepts. Thus, anyone who likes concepts will have a splendid time reading this book.

The concepts, incidentally, have to do with the measurable aspects of human behavior. For the *avant garde* in personnel, this basic theoretical structure can lead to some extremely practical vehicles for the analysis of group problems in the plant or office. Stogdill theorizes that group output is the function of member inputs, tempered by some mediating variables consisting of the formal structure and the role structure of the group. What people in a group put into it consists of performances, interactions, and expectations, and what comes out is productivity, morale, and integration. In between are the mediating variables of status and function, and responsibility and authority. Stogdill uses these basic elements to assess group achievement theoretically. Consequently, for the true student of group behavior this is an informed and really quite interesting book.

If all this sounds rather formidable, please be assured that it really is not. The basic theoretical structure is clearly

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spelled out and the rest of the book is well ordered and systematic. Although the scholarship is immense (there are no less than 794 references listed in the bibliography in the rear of the book) it is not stuffy.

This, however, does not diminish the fact that human relations, which began with some personnel men bringing in the social scientists, has now, by and large, become so technical and theoretical that most working personnel men will never read Stogdill's theory, to say nothing of the 794 other books which are equally obscure.

Chances are, though, that personnel men *will* be reading another book published at the same time as this one and written by Crawford Greenewalt. On page four of this book, which is called *The Uncommon Man,* Stogdill's theory is otherwise stated as follows: "The challenge is to create an atmosphere in which men, whatever their level of talent, gain through their association with one another." Perhaps if we read Stogdill carefully we'll know better how to do what Mr. Greenewalt recommends.

BEHAVIOR OF INDUSTRIAL WORK GROUPS: *Prediction and Control.* By Leonard R. Sayles. John Wiley & Sons, New York, 1958. 182 pages. $4.75.

*Reviewed by Margaret K. Chandler**

Interest groups are important components of modern society. In general, we tend to regard the political arena as their proper locale and to explain their success in terms of personal attributes such as leadership skills. This book, however, treats industrial work groups as interest groups and relates their goal-seeking behavior to structural rather than individual factors; i.e., to their technological and organizational settings.

Professor Sayles attributes the differences in the behavior of these groups to such factors as size, relative prestige, the amount of worker control over the pacing of work, the degree of homogeneity or similarity of interest within the group, and the relative independence or dependence of the employees in their work relationships, which in turn accounts for the patterning and flow of work within the organization. On the basis of a study of the behavior of more than 300 work groups in 30 plants, he develops insights and analyses that are much more satisfactory in many ways than the outcome of the kind of research that concentrates on presenting an impressive array of "statistically significant" low correlations.

Thus, this book should be useful to the manager who has been puzzled by the failure of attitude tests and other instruments to explain the kinds of behavior that he observes in his organization. The research indicates for one thing that the more undifferentiated the work group, the greater its ability to act in unison in the pursuit of its goals. In the undifferentiated group, where the members have similar tasks, pay, and working conditions, individuals hear their own sentiments echoed and reinforced. In the differentiated group, however, this factor of "resonance" is not present and, therefore, the members are deprived of a situa-

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tion that the author contends is basic to cohesive action. In this analysis, sentiments move from the individual to the group level; but the author avoids the mysticism of the "group mind" school of thought and, instead, provides a new and useful approach to the group structuring of sentiments.

The four work group types developed in the study—the strategic, apathetic, erratic, and conservative—may give a picture of behavioral consistency that some people will deny. The tendency for particular organizational and technological settings to breed diverse types of self-seeking behavior, however, is a phenomenon that certainly merits further research.

For the past 10 years there has been a steady flow of articles devoted to commentaries on the predispositions, biases, and assorted peccadilloes of those who labor in the field of human relations in industry. They are given accolades largely when they appear to be recognizing factors that were always apparent to everyone else: e.g., unions, the structure of the formal organization, power, economic motivation, and the like.

Therefore, I have resolved not to commend this work solely on the basis of the fact that its author has moved the human relations field from the treatment of the work group as a closed system toward analysis of it as an interest group that is very much a product of its organizational and technological environment. While the direction of change in individuals, groups, and organizations is still largely unpredictable, research of this type provides the basis for making it less so. But this is a study that does much more than merely confirm existing theory. For the man in management, the book provides a wealth of insights since it shows him how the firm, in making prescriptions for the organization of work, also determines the problems it will encounter in the field of human relations.

WORK IN THE LIVES OF MARRIED WOMEN. Columbia University Press, New York, 1958. 220 pages. $4.75.

*Reviewed by Karl R. Kunze**

These proceedings of a conference on womanpower conducted by the National Manpower Council at Arden House, Harriman Campus of Columbia University, in the fall of 1957 underscore the fact that although there has been a significant increase over the past few decades in the number of working women in the United States, and particularly in the number of married women who return to work after having children, less significant changes have taken place, however, as regards the status of women in the organizational hierarchy and the kind of work they do. Clerical, service, factory production, and teaching assignments are still the most common types of jobs held by women, and in proportion to the total number of women now employed the woman executive is still a comparative rarity.

Although it was the general consensus at the conference that women undoubtedly possess the capacity for useful, creative, and responsible work outside the

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home—as their contributions to medicine, psychiatry, biology, and chemistry bear witness—it was also conceded that some very real problems exist in the employment of wives and mothers: some have outmoded work skills when re-entering the labor market, some are unwilling or unable to devote the extensive time needed to prepare for demanding work, some lack the ambition to advance, and some can accept only part-time or occasional work.

Taking a look into the future, the report points out that more women of all employable ages will be required to work if the labor demands of society are to be met. Though better education, changes in family life, and other influences should all help toward this end, some serious impediments to the increased employment of women still remain to be overcome—notably the negative attitudes of employers and of the community at large.

While space does not permit a full-scale review of all the ground covered at the conference, some specific findings worth noting are: (1) Studies have not yet established any causal relationship between maternal employment and child maladjustment or juvenile delinquency; (2) there has been a marked increase in the employment of women from middle-income families, suggesting that women work because they aspire to the better things of life, rather than from sheer economic necessity; and (3) virtually no vocational guidance is at present available to married women returning to the workforce, though the need for it is very great indeed.

Work in the Lives of Married Women treats its subject in a smooth-flowing, interesting, and descriptive manner, making it a welcome relief from the statistical reports with their stodgy verbal commentaries that all too often characterize the writing in this field. It is well worth studying by personnel people and all others who are concerned with the problem of maximizing the use of the nation's available labor supply, both now and in the years to come.

Briefer Book Notes

(Please order books directly from publishers)

APPRAISING EXECUTIVE PERFORMANCE. By Carl Heyel. American Management Association, New York, 1958. 189 pages. $4.50. The first in a new series of AMA handbooks for operating executives dealing with the basic skills and tools of management, this book not only tells the executive what he has to know about sizing up his subordinates, but also helps him to develop to his own full potential.

INDUSTRIAL RELATIONS SYSTEMS. By John T. Dunlop. Henry Holt and Company, New York, 1958. 399 pages. $5.75. The author sets forth his own concept of an industrial relations system, illustrating its applicability by means of actual working examples. Included is a detailed analysis of the national industrial relations system in Yugoslavia.

LABOR AND ECONOMIC DEVELOPMENT. Edited by Walter Galenson. John Wiley & Sons, Inc., New York, 1959. 304 pages. $6.75. A portrayal of the evolution of the labor movement in India, Japan, Egypt, French West Africa, and the British West Indies in various stages of industrialization, this book shows how the labor factor fits into economic development models and what the political repercussions of alternative labor policies are. The chapters are written in a non-technical vein by recognized authorities in the field.

WHAT EVERY BUSINESSMAN SHOULD KNOW ABOUT PROFIT SHARING. Profit Sharing Research Foundation, Evanston, Ill., 1958. 16 pages. Gratis. This pamphlet outlines the fundamentals of profit sharing in brief question-and-answer form. The types of plans, the advantages to be gained, present trends, and sources of information on profit sharing are among the topics covered.

DEFINING THE MANAGER'S JOB: *The AMA Manual of Position Descriptions.* By C. L. Bennett. American Management Association, Inc., New York, 1958. 447 pages. $6.00 to AMA members; $9.00, non-members. Based on a survey of 140 companies, this AMA research study defines the functions and responsibilities of executives at all managerial levels, and shows how to create and use position descriptions, how they are actually prepared, and how companies establish and gain acceptance for a description program. Approximately 150 actual position descriptions are reproduced.

PERSONNEL RESEARCH FRONTIERS. By Cecil E. Goode. Public Personnel Association, Chicago, Ill., 1958. 176 pages. $3.50. A report on current personnel research in the United States and Canada based on a questionnaire survey. Current research projects and facilities are reviewed with emphasis on their implications for government personnel programs and future research needs.

THE ECONOMIC CLIMATE AND COLLECTIVE BARGAINING—1958: *Cornell University Conference Report, Ithaca, New York, May, 1958.* New York State School of Industrial and Labor Relations, Cornell University, Ithaca, New York, 1958. 46 pages. $1.00. An abbreviated report that endeavors to bring out the major ideas developed at the conference. Determinants of the economic climate, the impact of the economic climate on collective bargaining and collective bargaining prospects were the main topics discussed.

PROCEEDINGS OF THE CARNEGIE STUDY GROUP ON THE BASIC PRINCIPLES OF AUTOMATION. UNESCO, Paris, 1958. 40 pages. 15 cents. (Copies available from Carnegie Endowment for International Peace, United Nations Plaza, New York 17, N. Y.) A report prepared by a study group organized in Geneva during 1957 by the European Center of the Carnegie Endowment for International Peace, and originally published in *International Social Science Bulletin.* It examines automation from the technical, economic, social, and psychological viewpoints. The effects of automation on mental health and on collective bargaining are also discussed.

THE ROLE OF THE ENGINEER-SCIENTIST IN AMERICA. Michigan State University, Labor and Industrial Relations Center, East Lansing, Mich., 1958. 68 pages. $1.00. Selected papers from a conference held at Michigan State in April, 1958. The topics discussed include the Soviet approach to the professional manpower problem, the role of industry in enhancing the professional growth of the engineer-scientist, and the effective utilization of engineers in the automobile, chemical, and utility industries.

INTERDISCIPLINARY TEAM RESEARCH: *Methods and Problems.* By Margaret Barron Luszki. New York University Press, New York, 1958. 355 pages. $6.00. This volume summarizes five work conferences sponsored by the National Training Laboratories on the problems of interdisciplinary research, particularly in the area of mental health. Among the subjects discussed are the disciplines as seen by their members, patterns of collaboration, selecting and formulating the research problem, and organization and leadership.

EMOTIONAL DYNAMICS AND GROUP CULTURE: *Experimental Studies of Individual and Group Behavior.* By Dorothy Stock and Herbert A. Thelen. New York University Press, New York, 1958. 296 pages. $6.00. A number of research projects in group behavior conducted by the National Training Laboratories over a five-year period are reported here. The research deals with two main areas: individual, subgroup, and group interaction, and patterns of change in individuals and groups. The theoretical concepts underlying the research are presented, as well as their implications for the practitioner.

PERSON PERCEPTION AND INTERPERSONAL BEHAVIOR. Edited by Renato Tagiuri and Luigi Petrullo. Stanford University Press, Stanford, Calif., 1958. 390 pages. $7.50. Papers by 26 psychologists, sociologists, and anthropologists, most of which were presented at the Harvard-Office of Naval Research Symposium on Person Perception held in March, 1957. Among the subjects discussed are problem solving and the perception of persons, interpersonal perception and group effectiveness, facial features and inference processes in interpersonal perception, and social preference and its perception. An introduction summarizes the status of knowledge and research in the field and suggests avenues for further exploration.

Publications Received

(Please order books directly from publishers)

REUTHER'S PROFIT-SHARING DEMAND. A special report by the Economic Research Department, Chamber of Commerce of the United States, 1615 H St., N.W., Washington, D. C., 1958. 22 pages. Single copies, gratis; bulk orders to 25 copies, 25 cents; over 25 copies, 15 cents.

CHECK POINTS FOR SOUND COLLECTIVE BARGAINING. Industrial Relations Division, National Association of Manufacturers, 2 E. 48th St., New York 17, N. Y., 1958. 24 pages. $1.00.

DECISION-MAKING: *An Annotated Bibliography.* By Paul Wasserman with Fred S. Silander. Graduate School of Business & Public Administration, Cornell University, Ithaca, N. Y., 1958. 111 pages. $3.50.

HOW THE NLRB CAN STOP UNION VIOLENCE. By Sylvester Petro. Labor Policy Association, Inc., 1624 Eye Street, N.W., Washington 6, D. C., 1958. 16 pages. $1.00.

JOB DESIGN: *Pamphlet No. 15: Meeting the Manpower Challenge.* By George H. Hieronymus. Society for Personnel Administration, 5506 Connecticut Avenue, N.W., Washington 15, D. C., 1958. 42 pages. $1.00 to non-members; 50 cents to members.

ADVANCED ADMINISTRATIVE TRAINING IN THE PUBLIC SERVICE: *Governmental Studies No. 1.* By Keith B. Callard. The Institute of Public Administration of Canada, 33 Isabella St., Toronto 5, Ontario, 1958. 32 pages. Gratis.

who's who in this issue

WE HAD THE pleasure of meeting **J. Howell Turner,** author of "Wages and Productivity" (page 8), at AMA's Midwinter Personnel Conference in Chicago, where the address from which his article has been adapted was generally acclaimed as one of the clearest expositions of the complex issue of productivity to be heard in a long time. Mr. Turner, who has been Director of Employee Relations at Standard Oil Company (Indiana) since 1956, was formerly associated with California & Hawaiian Sugar Refining Corporation in a similar capacity. Before joining the latter concern, he was with Industrial Relations Counselors of New York City and the Columbia Steel Company of San Francisco. A graduate of Stanford University, Mr. Turner takes an active interest in professional affairs and is a frequent speaker on industrial relations topics. He is a member of AMA's Personnel Planning Council.

After a lapse of some years, **Charles A. Myers** makes a welcome return to our pages with "The Challenge of the 1960's: Manpower Management" (page 15), which was originally presented at the 50th Anniversary Conference of Northeastern University's School of Business. Dr. Myers, who has been Director of the Industrial Relations Section in the Department of Economics and Social Science at M.I.T. since 1948, will be familiar to many of our readers as the author, with Paul Pigors, of that standard textbook, *Personnel Administration.* Over the years, he has been a consultant in personnel administration and labor relations to many companies and has also served as arbitrator in numerous labor disputes. Of late, much of his time has been occupied with a Ford Foundation research project, which has taken him twice around the world within the past 15 months.

Charles F. Haner, joint author of "How Successful Salesmen Behave: A Counseling Guide" (page 22), is Professor of Psychology at Grinnell College, Iowa. A graduate of Kalamazoo College, Michigan, he obtained his Ph.D. at the State University of Iowa. Professor Haner's special interests are in the areas of learning theory and measurement. He is a member of the Iowa Governor's Committee on Mental Health and a former president of the Iowa Psychological Association. His co-author, **Givens L. Thornton,** who was graduated from Michigan State University and obtained his Ph.D. at the University of Denver, is Assistant Professor of Psychology, Registrar, and Director of the Testing and Placement Bureau at Grinnell College. He is particularly interested in personnel and institutional research. In addition to their academic studies, both

these psychologists have carried out personnel research projects for various industrial concerns.

While to many, if not most of the people who go through life ostensibly with their eyes wide open, today's electronic brains are an object of blank, uncomprehending wonder, they hold no impenetrable mystery for **Paul Duke,** who happens to be totally blind. Mr. Duke, to whom we are indebted for "Personnel Records: Along the Road to Automation" (page 31), lost his sight while serving with the Marine Corps in 1951. After his discharge from the hospital, he entered Syracuse University where he graduated *cum laude* in Production Management (Personnel Administration). Following a year at the Harvard Business School, he transferred to the Wharton School, where he will be graduating in Industrial Management this summer. Mr. Duke's grasp of electronic data processing has been gained through a series of summer jobs with International Business Machines—from 1952 through 1956 at the company's Endicott, New York, plant, and in 1957 at the IBM programing school for the SAGE computer in Bedford, Mass.

This issue marks the second appearance in our pages of **D. R. Lester,** joint author of "How to Conduct a Manpower Audit" (page 41). Mr. Lester, who now holds the post of Manager of Professional Personnel Relations at GE's Flight Propulsion Laboratory in Cincinnati, has been successively responsible for managing the Department's personnel development, recruiting and placement, compensation, and organization functions. He holds a Master's degree in Political Science from the University of Michigan and before joining GE worked in the Pentagon in the Office of the Air Force Deputy Chief of Staff Development. His co-author and colleague, **Marjorie L. Owen,** who holds the post of Specialist in Employee Relations at the FPLD, is a graduate of Wooster College, Ohio, and received her M.A. in Psychology from Western Reserve University. She was formerly Assistant Personnel Director at Tremco Manufacturing Company in Cleveland and has also held university teaching posts.

Irving A. Delloff, who contributes "Incentive Clauses: The Costly Clinkers" to this issue (page 52), is Director of Industrial Engineering at the Presto Lock Company of Garfield, New Jersey. Before assuming his present position, in which he is responsible for many labor relations activities as well as the industrial engineering function, he was Manager of the Standards Department. He has also served Presto in the capacities of time study engineer and cost accountant. Mr. Delloff, who holds a B.A. from Pace College and a degree in Industrial Engineering from New York University, is a senior member of the American Institute of Industrial Engineers and one of the editors of *Personnel Administration.*

Whereas some authors we could name have no notion when to stop, **Herbert E. Krugman**—as "Management Development Training: Who Profits Most?" (page 59) bears witness—seems to experience no difficulty in saying what he

has to say in a minimum of words. A frequent contributor to PERSONNEL, as well as to many other professional magazines, Dr. Krugman holds a Ph.D. in Sociology from Columbia University, at whose Graduate School of Business he is a lecturer in management. At the time this article was written, he was a member of the well-known consulting firm of Richardson, Bellows, Henry & Company, with which he had been associated, on and off, since 1946. (The off-period, from 1949-52, was a stint as a Research Associate at the Princeton Center of International Studies.) At the end of last month he called to tell us that he was leaving RBH to join Raymond Loewy Associates as Director of Market Research. Needless to say, we wish him every success in his new assignment.

George B. Strother, author of "Personnel Management in Theory and Practice" (page 63), has followed a well-trod psychologists' trail—from the experimental laboratory to the field of personnel management. In his "orthodox" period he did experimental work with rats, opossums, delinquent boys, and brain-injured children. Service in World War II and subsequently in the Korean War brought him face to face with some highly practical personnel problems, and he has since become increasingly concerned with the practical aspects of personnel administration. Dr. Strother, who is Associate Professor of Commerce at the University of Wisconsin, has held a number of academic posts. A graduate of the University of Missouri and holder of a Ph.D. from the University of Indiana, he has written widely on personnel subjects and served as a consultant on personnel and management development for a number of companies in the Middle West. He is the father of three small sons who are, he says, far more difficult to manage than either the brain-injured or delinquent boys of an earlier era.

Francis D. Harding, whose article, "Incentives for Hazardous Work: A Survey," appears on page 72, is a civilian Research Psychologist with the United States Air Force. He is also a partner in Southwest Personnel Consultants, an organization providing psychological services throughout South Central Texas. Dr. Harding, who holds a Ph.D. from Purdue, obtained his M.A. at the University of Illinois and his B.S. at Boston University. Before taking up his present position with the USAF, he was associated with Kaiser Aluminum and Spiegel's Inc.

Somewhat belatedly, it crosses our mind that this issue is chockablock with psychologists. Here we have yet another —**Lee W. Cozan,** author of "Forced Choice: Better Than Other Rating Methods?" (page 80), who is a research psychologist with the Department of Health, Education, and Welfare. In addition to his official duties, Mr. Cozan finds time to edit a new publication, *Engineering and Industrial Psychology,* and is also currently working toward fulfilling the requirements for his Ph.D. Though this is the first time we have had the pleasure of publishing an article by him, he has contributed many papers to other personnel, psychological, and educational journals.

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